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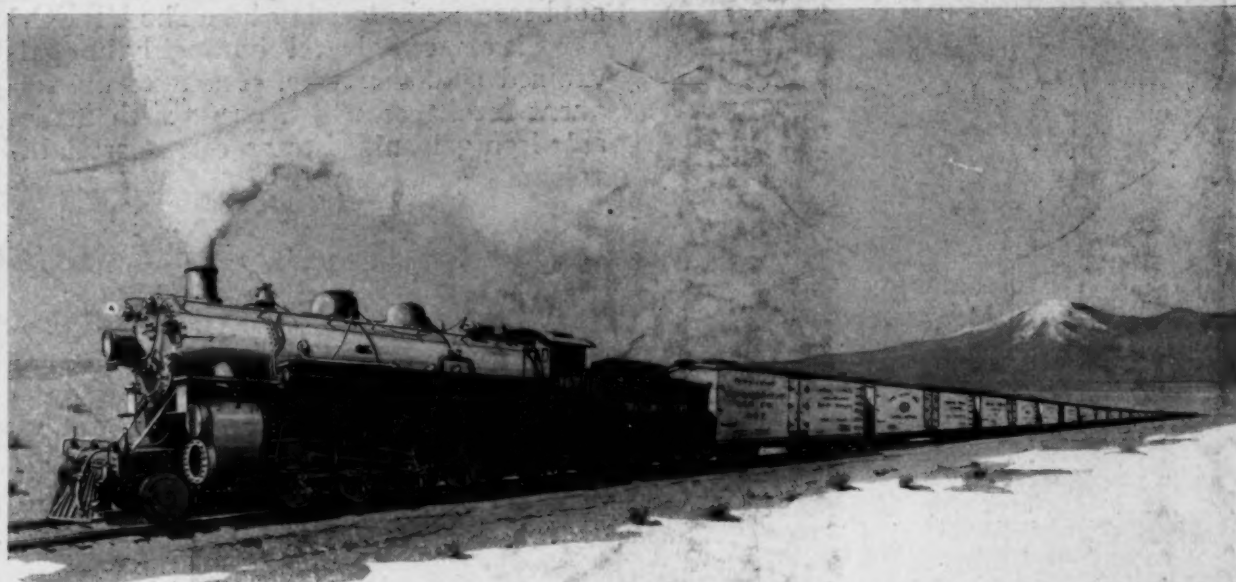
Railway Age

FIRST HALF OF 1924—No. 23

NEW YORK—MAY 10, 1924—CHICAGO

SIXTY-NINTH YEAR

Published weekly by Simmons-Boardman Pub. Co., 30 Church St., New York, N. Y. Subscription Price U. S., Canada and Mexico, \$6.00; foreign countries (excepting daily editions), \$8.00, and \$10.00 a year, including all dailies; single copies, 25c. Entered as second-class matter January 30, 1918, at the post office at New York, N. Y., under the act of March 3, 1879.



The Booster Brings In a Cripple

*"One of the Booster-equipped Mikados hauling a fast perishable freight blew out a front cylinder head. The engineer put the engine on one side and with the aid of The Locomotive Booster handled his entire train 20 miles, to the terminal."

Smoothing railroad operation is one of the important functions of the Booster.

By avoiding engine failures which would otherwise be inevitable, the Booster maintains the even flow of traffic that piles up dividends.

*We will tell you where this happened if you are interested.



THE LOCOMOTIVE BOOSTER
(Applied on trailing truck)

Franklin Railway Supply Company, Inc.
New York Chicago Dallas Montreal San Francisco

The Locomotive BOOSTER

URECO

PRESSED STEEL WELL TRAP



All parts
hot galvanized

Trap shown in open position

The Hinge supporting the cap also provides a stop which allows of raising of cap sufficient to hold it open for cleaning purposes. A slight vibration of car will drop cap over the outlet pipe. If cap is pushed open from outside of car it will fall back to water-seal position automatically. Raised cap allows free access to bowl for cleaning purposes.

Trap shown in closed position

The URECO Trap insures **perfect water-seal** as the cap is securely attached and cannot become misplaced or lost. The URECO Trap is of pressed steel thoroughly hot galvanized and, therefore, **eliminates the frequent breakages** which occur with malleable iron galvanized traps, due to crystallization.



No lugs
or
obstructions
in bowl

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332 South Michigan Blvd., Chicago, Ill.

224 ST. JAMES STREET, MONTREAL, QUE.

EDITORIAL

Railway Age

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The great interest shown by the American public in the exhibits which several railroads have made of their earliest and latest locomotives has attracted attention in England and at the British Empire Exhibition at Wembley a similar exhibit has been prepared. One of the locomotives in this exhibit is

Railways at Wembley

"Locomotion No. 1," which was designed by George Stephenson, the pioneer locomotive builder, and which was the first locomotive used on the first common-carrier railway in the world, the Stockton & Darlington. Standing beside this diminutive locomotive is a recent Pacific type used by the London & North Eastern on its famous train, "the Flying Scotsman." The Stockton & Darlington was opened to traffic in 1825—just one year less than a century ago—so the exhibit at Wembley portrays practically a century of railway development in England. There are, of course, at Wembley exhibits of other railway equipment, including the latest types of passenger cars and several other locomotives—among which is the recently completed Reid-MacLeod turbine type. The railway exhibit at Wembley, while it is said not to be as complete as might be desired in view of the importance of the industry, is nevertheless the first in either Europe or America to anticipate the railway centennial soon to be reached on both sides of the Atlantic, and it should offer valuable suggestions to everyone who is interested in a fitting celebration of the centennial proper, which comes in England next year and three or four years later on this continent.

While there has been a substantial improvement in locomotive design from the standpoint of efficiency on the road, many

Small Things Count in Prompt Engine Turning

of the details in relation to its performance at the terminal, where it spends two-thirds of the time, have been generally neglected. Some specialties that tend to delay locomotives at the terminal more than justify this delay because of their improved economy or capacity on the road. But how about the meager blow-off valves still found on many locomotives in active service? Is it realized that, dependent on boiler size, it requires nearly two hours to empty a locomotive boiler through a one-inch blow-off valve, when a few minutes should suffice for this operation with a suitable sized valve? Then consider the time required and the danger of opening a blow-off valve located at the center of the throat sheet when this valve has no operating lever and it is necessary for a man to climb in between the frames either to open or close this valve with a wrench. Washout plugs are another flagrant cause of terminal delay to locomotives as it frequently takes more than an hour to remove or replace plugs that are not suitably designed for the purpose. These are trivial details in design but the loss of an hour on their account is no less vital to the output of the locomotive than an hour required for rolling flues or some more excusable delay. With proper terminal facilities, a locomotive can easily be placed in the house within an hour after it cuts off the train and in a specially designed enginehouse this movement can be accomplished in a few minutes. But in every-day practice on a majority of railroads the time lost in moving from the train into the enginehouse will average no less than three hours

per locomotive. With special apparatus it was demonstrated that a large locomotive boiler can be filled and steamed up to 100 lb. pressure in half an hour. Ordinarily this operation consumes an hour and a half. This represents another unproductive locomotive hour and when each new locomotive represents an investment of \$75,000 or more, every non-productive locomotive hour should be a matter of serious concern to railway managements.

The National Association of Railroad and Utilities Commissioners performed a very constructive service by conducting a conference on the grade crossing

A Constructive Grade Crossing Program

accident problem at Chicago on April 30 and May 1, to which were invited representatives of all public and private agencies concerned with this problem. By taking this action, this association provided an opportunity for all parties interested to present their views thereby to promote a mutual understanding and develop a concerted plan of action to reduce these casualties.

The rapid development of the use of motor cars has revolutionized street and highway transportation. The accident problem is only one of many which have followed in the wake of the automobile. Street congestion and the control of speeding are typical of many problems which have followed the development of this form of transportation. Furthermore, the accidents at grade crossings are only a fraction of those occurring elsewhere for while 2,268 persons were killed at railway crossings in the entire United States last year, more than 700 persons were killed in motor accidents at other than railway crossings in the city of Chicago alone. While not depreciating the seriousness of the grade crossing problem in the least, it is well to bear in mind the fact that it is only a part, and a comparatively small part, of the larger problem of the control of motor traffic on all highways.

Probably the most constructive result of the conference was the recognition of the fact that the general elimination of grade crossings, while desirable, is impractical of realization owing to the enormous expense involved and that relief must be sought through the adoption of measures designed to enforce care in crossing tracks. This was well summarized in a message from President Coolidge in which he stated that while the ideal is complete separation of grades of railways with highways and, as the one and final solution of the problem, should be accomplished as soon as possible, it is realized that this is beyond realization in the lives of those now living because of the magnitude of the task and the inability to meet the necessary costs. The practical remedy which he suggested was the surrounding of highway crossings with proper safeguards, giving suitable notice of the approach of trains and awakening in the mind of the traveler a full sense of personal responsibility for care in approaching and passing every railroad crossing.

The conference was particularly timely as we are now at the opening of the season of heaviest travel and it is certain that this year will see a continuation of the rapid increase in the number of motor cars on the roads. The problem is so vast and all inclusive in the number of people affected that adequate results can be secured only by the full co-operation

of all agencies. The greatest relief will come from the education of the drivers of automobiles to the fact that every railway crossing is a danger point and as such demands the exercise of adequate precautions. The railways have been able to reduce the fatal accidents among their employees until they are now less than one-fourth of what they were 20 years ago by educating them to the importance of protecting themselves. The public should be equally responsive and it is the duty of the railways, public regulatory authorities and automobile and other organizations to co-operate in an intensive movement of this character.

These educational measures should be supplemented by penalties to curb those who do not respond otherwise. An effective means to this end would be to place police officers at important crossings or to give crossing watchmen authority to arrest those who disregard warning signals and thereby jeopardize the lives of others as well as themselves. In the relatively few instances in which this has been done the driving of cars through gates and the running down of watchmen has been reduced practically to the point of elimination.

The railways owe a responsibility to the public to place every crossing in as safe a condition for travel as is practicable. Public authorities should co-operate by standardizing warning signs and by eliminating all other forms of signs which tend to confuse a driver. With the adoption of these measures and with the enforcement of obedience on the part of drivers of automobiles to reasonable regulations, casualties can be reduced greatly. Until such a program has been put into effect it is not reasonable to demand the general elimination of crossings for this is the last resort and should proceed according to an orderly program, the size of which will depend upon the amount which the public is willing to allow the railways to earn and to devote to this purpose.

Labor Union Dictation to Congressmen

ON MAY 5 the national House of Representatives staged the most remarkable exhibition of subservency to the dictation of labor leaders and disregard of the interests of the public that has been given in Washington since Congress, in 1916, under the threat of a nation-wide strike of the labor brotherhoods, rushed through the Adamson Act. By a vote of 194 to 181 the members of the House on that date took the Howell-Barkley bill, which was drafted by the heads of the railway labor unions, out of the hands of the House Committee on Interstate Commerce and placed it upon the House calendar for immediate consideration.

Previously 154 members of the House had signed a petition for a vote upon the question of taking the bill out of the hands of the committee. What this meant was bluntly stated by Congressman Tincher of Kansas in a speech on April 29, when he said, "One hundred and fifty men filed up there and signed the petition when the gentleman from Alabama (Mr. Huddleston) said that this was a demand of organized labor, and told them to sign it." The 194 members who on May 5 voted to take the bill from the committee just as truly acted under the dictation of the labor leaders.

People of all classes are suffering from a great increase of taxes and are demanding a reduction of the cost of government in order that taxes may be reduced. The Howell-Barkley bill provides for the creation of four national boards of adjustment which would contain 40 members, one-half representing the railways and one-half representing the national labor unions, who would be paid a salary of \$7,000 a year each or a total of \$280,000. Each board would have a secretary who would be paid \$4,000. These salaries would amount to \$296,000, and *although the members of the boards*

would not represent the public at all, but only the railways and the labor unions, all these salaries would be paid from the federal treasury. In addition, it would create a federal board of mediation and conciliation of five members, each at a salary of \$12,000, or a total of \$60,000. The total expenses of the Railroad Labor Board, which the bill abolishes, will be in the present fiscal year about \$300,000, while merely the salaries of the proposed boards of adjustment and board of mediation and conciliation would amount to \$356,000. In addition, these boards would be authorized to employ all the assistants, stenographers, clerks, etc., that they might deem necessary and incur any additional expenses they might see fit. Thus the bill contemplates an increase in the cost of government at a time when the public is unanimously demanding a reduction of it.

But this point is one of very little importance compared with others involved. The Railroad Administration created National Boards of Adjustment such as are contemplated by the Howell-Barkley bill. They were functioning in 1919, the last year of government operation, and yet the record shows that in that year there were 248 strikes upon 153 railroads in this country at 469 different points, causing the loss of 2,000,000 man-days of employment. On the other hand, for almost two years now, under the present method of dealing with differences arising between railways and their employees, there has been almost complete peace on the railroads. Well, therefore, did Congressman Tincher say in the address already quoted that the Howell-Barkley bill, which would re-establish boards of adjustment similar to those of the Railroad Administration and abolish the Railroad Labor Board upon which representatives of the public hold the balance of power, should be called the "Resumption of Railway Strikes bill."

The bill would destroy all representation of the public in the settlement of labor controversies, although the public pays annually in freight and passenger rates over three billion dollars which is immediately paid out in railway wages. Another fact of great importance which cannot be too strongly emphasized is that it provides representation in the settlement of wages and working conditions for only employees who belong to labor unions. It is estimated by those, who, aside from the labor leaders, are best situated to judge that at the present time only about 48 per cent of the clerks, 25 per cent of the shop employees and 15 per cent of the maintenance of way employees belong to the national unions. On this basis, the proposed legislation would leave 115,000 clerks, 281,000 maintenance of way employees and 398,000 shop employees without representation in the settlement of wages and working conditions. These figures total 794,000, or 46 per cent of all railway employees. Obviously Congress has no moral right to pass legislation which would give not more than 54 per cent of all employees all the representation in negotiations regarding wages and working conditions and 46 per cent no representation at all. It is highly probable that it has no constitutional right to do so. But that is what, under the dictation of the labor leaders, it is threatening to do.

More than four years have now elapsed since the railways were returned to private operation and the present system of dealing with labor conditions and controversies on the railroads was established. The last month of government control was February, 1920, and the last month for which complete statistics of operation are available is February, 1924. Let us, therefore, compare certain facts regarding railway operation in these two months to see what light they throw upon the changes that have occurred since the railways were returned to private operation in the conditions that would be affected by the Howell-Barkley bill. The railways in February, 1924, handled about 10 per cent more freight than in February, 1920, but their operating expenses were \$1,390,000 a day less than in February, 1920. Was this reduction of expenses due to reduction of wages? On the contrary, the average earnings of each employee in February, 1920,

were \$127, while in February, 1924, they were \$132. To what, then, was the large reduction of expenses due? It was principally due to a reduction in the number of employees. The number of employees in February, 1920, averaged 1,970,525, while in February, 1924, it averaged only 1,753,289, a reduction of 217,236. Owing entirely to the reduction of employees the total wages paid in February, 1924, were almost \$30,000,000 less than in February, 1920. This large reduction in the number of men employed was due to increased efficiency of management and operation. This increased efficiency of management and operation largely took the form of the establishment of better relations between the officers and the employees resulting in more efficient work by the employees and in more traffic being handled per employee, per locomotive, per car, per ton of fuel consumed and per mile of line.

The increase in efficiency of operation which has been secured since the railways were returned to private operation and which is principally measured by the large reduction that has been effected in the number of employees has been the main thing that has rendered possible the reductions of rates that already have been made; and a continuance of it must be mainly relied upon to make possible future reductions of rates. The strongest demand for reduction of rates is coming from the western farmers. Nevertheless, the labor leaders are now succeeding in getting the support of a large number of the members of Congress for legislation the passage of which would largely destroy the results of all the work that railway managers and officers have done within the last four years to increase efficiency and economy of operation. Furthermore, a large number of the Congressmen from the very western states whose farmers are most insistent in demanding reductions of rates are supporting this proposed legislation. Among the representatives who signed the petition to take the Howell-Barkley bill out of committee and put it on its immediate passage were one from Arizona, four from Arkansas, four from California, seven from Illinois, one from Iowa, one from Kansas, five from Minnesota, eleven from Missouri, one from Montana, four from Nebraska, one from Nevada, one from North Dakota, seven from Oklahoma, one from Oregon, three from Texas, one from Washington and eleven from Wisconsin.

The real leaders in the effort in Congress to jam through this legislation under the lash and spur of the labor leaders are Senator LaFollette and other western radicals who have been making the most virulent attacks upon present railway rates. They pretend to be trying to secure lower rates for the farmers, but they are working constantly with the labor leaders who, by trying to secure further advances in wages and legislation which would tie the hands of railway officers who are trying to increase the efficiency and economy of operation, are doing more to make reductions of rates impossible than all other persons in the United States.

What does it all signify? Simply this. The labor leaders, and radical public men under the leadership of LaFollette, are engaged in an effort first, to pass legislation which will give the labor leaders a strangle hold on the railways of the country, and, second, to secure the passage of legislation which will destroy the earning capacity of the railways under private operation and thereby force them into government ownership. They all want government ownership and they all want to make sure that if the railways are forced into government ownership the labor leaders will be so firmly entrenched that under government ownership they will be in control of railway management.

When one considers what is actually going on one wonders whether most of the farmers of the country and the leaders of their organizations, and especially those of the west, are complete fools. Was ever there presented a more astounding spectacle of folly than that of the western farmers demanding reductions of railway rates and at the same time allowing themselves to be hoodwinked into supporting public men who

constantly under the dictation of labor leaders are moving heaven and earth to secure the adoption, both in and out of Congress, of policies which would make it impossible for the railway managers to effect the reductions of railway expenses which are absolutely essential to making it possible to effect substantial reductions of rates?

It is the old story of the lion and the lamb lying down together with the lamb inside of the lion. The western farmers are affording the labor leaders the easiest, most willing prey they have ever feasted upon. If the Howell-Barkley bill is passed it will be because the representatives and senators of agricultural territories vote for it, and if the farmers of these territories cannot then see that they have been betrayed by their own representatives in Congress they will deserve to be called the biggest aggregation of suckers in any civilized country.

Radical Tributes to Railway Public Relations Work

THE MOST significant tributes that ever have been paid to the public relations work the railways have done within the last few years have been paid recently by several radical public men, labor leaders and journalists. Most of the things said were not intended to be tributes, but they were. One of the highest of these tributes has been paid in the form of a threat of legislation to prohibit the railways from publishing advertising in magazines and newspapers to influence public sentiment and charging it to operating expenses.

We especially call the attention of our readers to the article entitled, "Senate Hearings on Repeal of Section 15a," which was published in the *Railway Age* for May 3, and particularly to the part of it entitled, "Benton Says Shippers Inspired," on page 1089, and the part entitled "Railroad Advertising" on page 1093. As reported in that article, Senator Pittman of Nevada expressed the opinion that "there must be a distinction between advertising to increase traffic and to influence public sentiment," and announced his intention of introducing a bill to prohibit the railways from charging public relations advertising to operating expenses. Senator Gooding of Idaho, Senator Howell of Nebraska and Senator Smith of South Carolina, expressed themselves as in agreement with Senator Pittman.

What were the grounds of their complaint? Senator Gooding said that since the railroads had begun advertising in local papers in Idaho at non-competitive points he was being deluged with communications urging him not to interfere with the Transportation Act. Senator Howell said that the railways in Nebraska are sending men around to ask local business men to write to Congress opposing changes in the law, and that he could trace their movements from town to town by the bunches of letters he received. These statesmen object to the railways stirring up public sentiment to oppose the kind of legislation they are advocating.

Senator Pittman made the remarkable statement that under our form of government the proper place for the railroads to present their case is before the Interstate Commerce Commission and Congress. In other words, men such as Pittman, Gooding, La Follette and Brookhart, are to go to the people as they have in the past and disseminate the grossest misrepresentations regarding railway matters. They are to be ably assisted by socialists, communists and radical labor leaders. The railways and their spokesmen meantime must keep perfectly quiet. They have no right to tell the American people anything about their business. Of course, in that case the public would believe what the anti-railroad propagandists told it and more men of this kind would get elected to Congress. Then, the railways would be graciously per-

mitted to appear before them in Washington and present facts proving that what they had told the people was not so and thereby influence them not to pass the kind of legislation that they had promised the people they would pass. This would, of course, make it much easier than it has been recently, or is now, to pass railway legislation intended to destroy private ownership and management.

The suggestion that legislation should be passed under which everybody who wished to attack and lie about the railroads could freely do so, but which would in effect prevent the railways from answering these attacks and lies—that a great industry should be prohibited from charging to its operating expenses advertising placed in newspapers and magazines to influence public sentiment regarding its business—is novel, but we hardly think it will be received with enthusiasm by the American magazine and newspaper press. The railways have been doing some such advertising. Other large concerns, such as the American Telegraph and Telephone Company, Standard Oil Company and the meat packers, have been doing it also. The greatest possible publicity should be given in their own states to the views upon this subject of Senators Pittman, Gooding, Howell and Smith and other statesmen who agree with them. It is easy to imagine what would be said upon the subject by their local newspapers.

Another tribute to the public relations work the railways have been doing is paid by William Hard, a journalist whose writings are syndicated in a large number of newspapers, including many of the Hearst papers, and who is very far from being "conservative" on public questions. In an article dated April 25, which was widely published under Mr. Hard's signature, he said, "The effort by the railroad managements to make the railroads popular and prosperous before the statesmen at Washington can make the railroads deservedly hated and unprofitable, is going on day and night, and has produced some extraordinary and politically unobserved results. The observer from Washington is bound to note that the real inside story of ultimate legislation is not in Washington at all but in the new policies of the central offices of the railroad managements." Mr. Hard said that the railroad managers set up two ideals for themselves. "One was to get a notable improvement in service, the other was to get on good personal terms with shippers. The former ideal has been thoroughly achieved, the latter is on its way to consummation, particularly through the creation of the Shippers' Regional Advisory Boards."

Mr. Hard did not either criticize or praise the railways. He simply told the facts about what they are doing and the effects. It is interesting to observe the reaction to these developments of the mind of a radical who does not pretend to be trying merely to promote a better policy of railway regulation, but who is avowedly for the destruction of private ownership and management, not only of railroads but of all kinds of property. The Miami Valley Socialist of Dayton, Ohio, published an editorial in its issue for April 4 which gives us this reaction. It was entitled, "One Big Union." Referring to the organization of the Shippers' Regional Advisory Boards, this paper said: "Quietly, with no more publicity than need be, big railway interests and shipping interests have perfected an apparatus for adjusting disputes and friction between them without intervention of the government," and added, "in short our American capitalists have achieved the united front. * * * They have formed and are forming the one big union. Look out!"

The "capitalists" on the Shippers' Advisory Boards throughout the country include representatives of the farmers and their organizations. But the farmer is a "capitalist" just as truly as the owner of a big industrial concern. Therefore, when representatives of the railways sit down to discuss with members of a Shippers' Advisory Board their mutual problems, it is a fact that those present do constitute a part of the one big union of capitalists. As the Miami Valley Socialist

says, the old policy of the railways and shippers in washing their dirty linen in public gave "too much opportunity for those pesky radicals and agitators to cast the uncharitable rock of criticism." The method now being adopted makes it possible to settle amicably many questions that arise and shuts the "pesky radicals and agitators" out.

No wonder Senators Pittman, Gooding, Howell and Smith complain about the efforts the railways are making to educate the public regarding their business. No wonder the Miami Valley Socialist warns socialists and others who are seeking, first, the destruction of private ownership of railroads, and subsequently the destruction of all kinds of private property, to "look out." If the railroads continue to confer with all classes of shippers regarding their mutual problems, to improve their service, to effect economies and educate public opinion, the propaganda being carried on to destroy private ownership of railways may be nullified and the difficulty of destroying all the present political and industrial institutions of the United States greatly increased.

No more conclusive evidence that the railways are really getting results with their public relations work could be cited than is afforded by the complaints being made regarding it by the radicals and socialists.

Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

McAdoo, by Mary Synon. Biography of William G. McAdoo. New York and the Hudson tunnels, p. 11-42. The Railroad administration, p. 307-330. 354 p. Published by Bobbs-Merrill, Indianapolis, Ind. \$3.00.

Miners' Wages and the Cost of Coal, by Isador Lubin. Freight differentials, p. 175-179, 265-276. 316 p. Published for the Institute of Economics by McGraw-Hill Book Co., New York City.

Motor Trucks Become Asset to Railroads. Motor freight services on Pennsylvania and New York Central systems. 15 p. Published by National Automobile Chamber of Commerce, Inc., New York City.

Private Enterprise in British Tropical Africa. Report by British Colonial Office, on relative advantages of private and public enterprise in developing East and West tropical Africa, with special reference to transportation. 26 p. Published by His Majesty's Stationery Office, London, England.

Periodical Articles

Business As I See It, by Stephen Leacock. A non-series article on business, advertising, and the wording of crossing signs (p. 823). Harper's, May, 1924, p. 815-825.

Democracy in American Factories, by James Myers. Answers specific questions as to what happens when workmen are represented in management. Century, May, 1924.

The Frightened Farmer, by Bruce Bliven. What has frightened him, and what is proposed to restore calm, including freight rate reductions. Atlantic Monthly, May, 1924, p. 678-686.

The Honduras National Railway, by W. R. Long. Commerce Reports, May 5, 1924, p. 325-326.

The Production of Heavy Forgings. A Brief Survey of the Status of the Industry in America at the Present Time, Together with Data Helpful to the Engineer Ordering Forgings. Mechanical Engineering, May, 1924, p. 241-247, 307.

What Are the Railroads Worth? by Aaron Hardy Ulm. "The question of value, studied for ten years, should interest the citizen who pays \$60 a year, even though he does not ride." Popular Finance, May, 1924, p. 71-72, 95.

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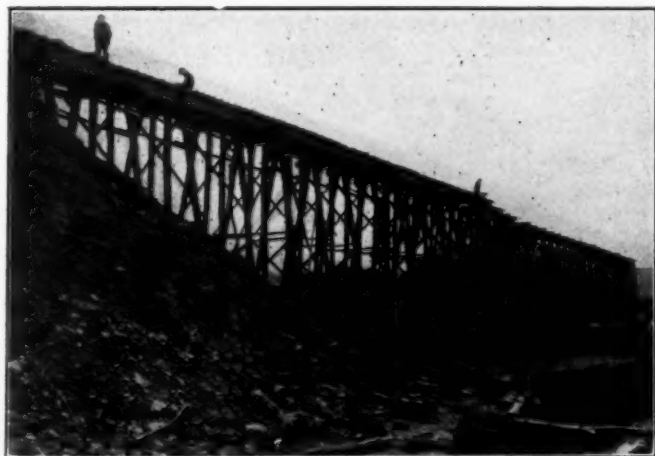
Looking Toward Dawson City on the Old Providence-Dawson Line.

Alternate Route Solves Operating Problem

Illinois Central Builds New 40-Mile Line to Expedite Traffic on Its Kentucky Division

THE ILLINOIS CENTRAL is now completing a 40-mile line in western Kentucky which is designed to increase capacity and reduce operating costs on its Kentucky division. Under the plan adopted the new line, which extends from Dawson Springs to Central City, offers a low grade alternate route which will be operated as a single track line

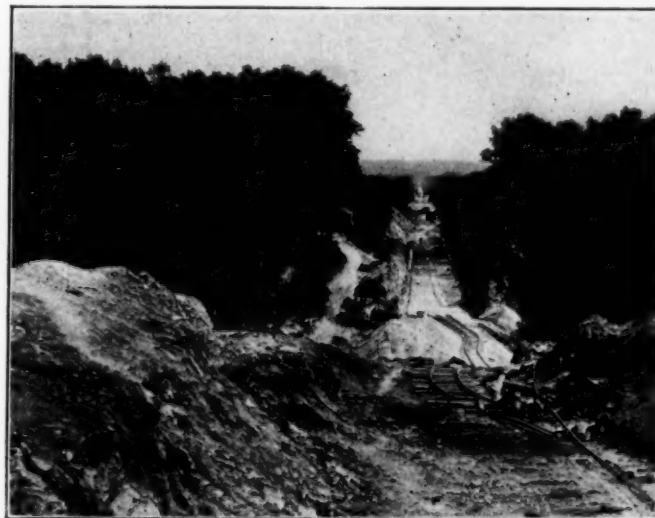
in addition to a considerable merchandise business between Louisville and the South. The physical characteristics of this line, built to grades of 1.25 per cent uncompensated for curves up to six degrees, has long made this division one of the most difficult to operate on the Illinois Central system. But it was the rapid growth of business during the early years of the European war which created a condition calling for improvements designed to effect economy and expedition in the handling of the traffic immediately at hand as well as that of the near future. As most of the coal moves to the south, the greatest need for improvement was in the engine district between Central City and Paducah and for this rea-



Making a Big Fill North of Madisonville, Ky., Where the Line Crosses the Louisville & Nashville

for heavy tonnage trains in both directions while the old line will be retained for local freight and passenger movements in both directions in addition to mine pick-up trains serving the numerous coal operations within the territory in question. Local conditions made this unique plan preferable to the reconstruction of the old line for double track and revised grades on a location sufficiently close to the original line to afford continuous service to the communities and mine properties established along the route.

The new line comprises the most comprehensive feature of a general project for the improvement of the Kentucky division which has been in progress since 1914. This division carries a heavy coal traffic which originates largely in the territory between Dawson Springs and Central City,



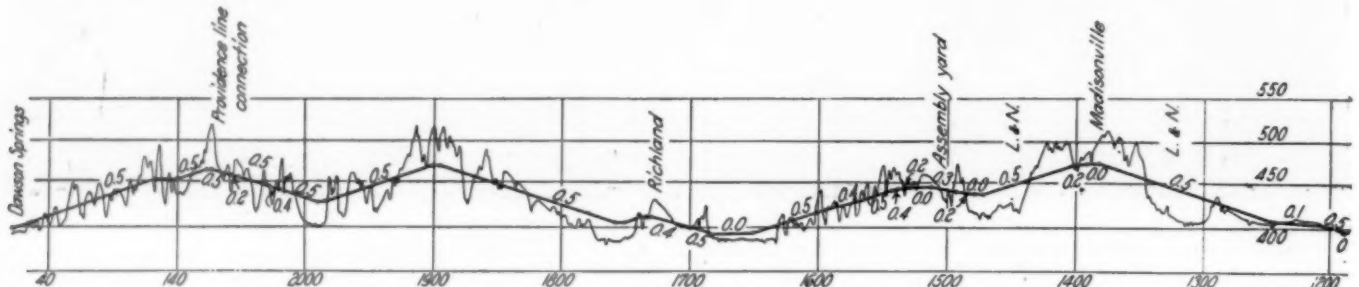
A Double Track Cut Through Shale, South of Midland, Ky.

son, betterment work has been concentrated on this district. For the same reason it was found that the best adjustment of tonnage ratings could be obtained by the adoption of a ruling grade of 0.5 per cent grade against the southbound or loaded movement and one of 0.75 per cent against the northbound or empty movement.

The first step in this project covered grade revision and

double tracking on the southern end of the district where physical conditions permitted marked improvements in the least time and at the smallest expenditure. This was followed in 1917 and 1918 by the complete reconstruction of the line between Scottsburg and Dawson Springs. This was followed by further improvements so that, with the completion of minor projects now under way between Paducah and Dawson Springs this portion of the district, or a total of 58.8 miles will have no grades in excess of the established maximums, and will be entirely double track with the ex-

such a nature that little of it could have been incorporated in a line conforming to the adopted ruling grade and that the construction of a new line along the old location would have made it impossible to retain the old line in service as has been done under the plan adopted. Moreover, the construction of a new line in close proximity to the old one would have introduced serious interference with its operation during construction. Some measure of the difficulties attending such a plan is to be had from a study of the construction problems encountered at Central City where the



Profile of the New Line Between Central City and Dawson Springs

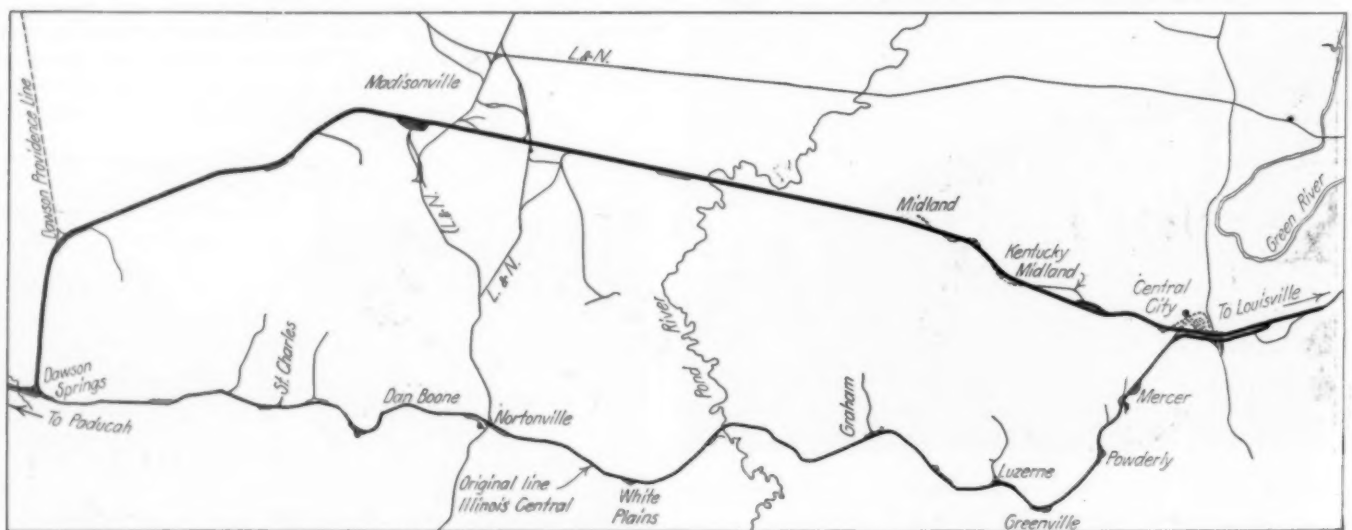
ception of one gap of 11 miles and another of 10.4 miles. Plans now under consideration call for the completion of the remaining second track work within the near future.

The Final Step in the Project

The work now under way between Dawson Springs and Central City represents the concluding step in the plan for the improvement of the Central City-Paducah engine district and comprises by far the most extensive project undertaken in connection with the general program. As stated previously, it consists for the most part of an independent line located substantially seven miles north of the old line

new line occupies a location practically co-incident with the old one.

Although most of the new 40-mile line occupies a location widely separated from the old one a considerable portion of it follows previously established locations. In addition to the 4 miles of relocation through Central City the new line incorporates 4.1 miles of the south end of the so-called Dawson-Providence line, a project undertaken in 1917 for a branch extending from Dawson Springs to Providence, and on which work was suspended after a considerable portion of the grading had been completed. In addition to this, 8 miles of the new line comprises the reconstruction of the Kentucky Mid-



The Old and New Lines Between Central City and Dawson Springs

and with a total length of 40.7 miles, of which approximately three miles represents an extension of the work beyond the east (timetable, north) end of the engine district for the purpose of effecting a complete reconstruction of the facilities at the Central City terminal. Most of the work on this project may be classed as heavy construction. It involves over 3,026,000 cu. yd. of grading, much of which is in rock, and, including terminal improvements in Central City, entails an expenditure of approximately \$3,000,000.

Among important considerations pointing to the advantage of a new location is the fact that the old line is of

land, an independent railroad projected as a connection between Central City and Madisonville, but which was completed and in operation only as far as Midland when it was purchased by the Illinois Central. The incorporation of the several lines mentioned above left only 24.6 miles of line to be constructed on an entirely independent location.

The Line Occupies Broken Country

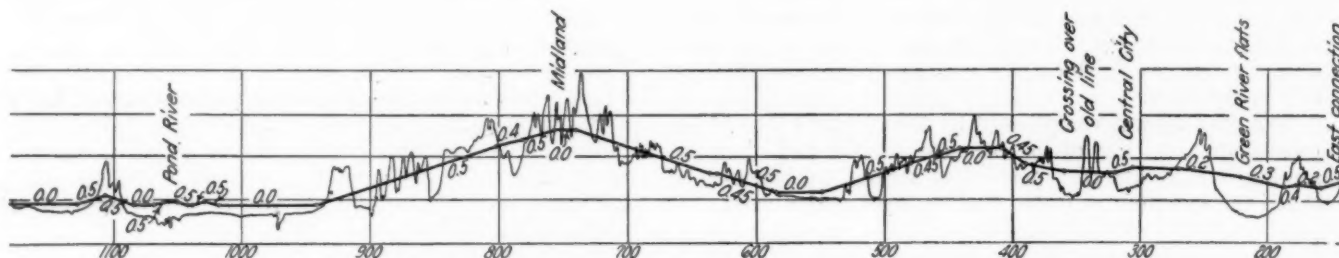
The territory traversed by the Dawson Springs-Central City line is typical of the western Kentucky coal measures, a broken country in which differences of elevation of as much

as 200 ft. occur within a very few miles. The difficulty of the location was greatly increased by the fact that the line lies crosswise to the general direction of the drainage for nearly its entire length, affording scant opportunity to fit the location to the drainage. The alinement on the whole is exceedingly direct with only 456 deg. total curvature and embracing one tangent over 14 miles long. The profile, on the other hand, is exceedingly choppy. Thus, the south end of the line lies in the valley of the Tradewater river at elevation 400, while the north end is in the valley of the Green river at elevation 426.75, but in traversing the inter-

saving of 3,170 ft. in distance and a reduction of 1,556 deg. in curvature and of 128 ft. in rise and fall.

The Situation at Central City

As previously mentioned, marked changes in grade and alinement were made through Central City. These were necessary to correct conditions which had long imposed a very serious obstacle in the handling of traffic through this terminal. The old alinement involved heavy curvature, with the engine terminal and freight yard located just west of the town between a 6-deg. 25-min. curve of 90 deg. total



Profile of the New Line Between Central City and Dawson Springs

vening 40 miles the line climbs over five summits at elevations ranging from 460.75 to 481, while in the crossing of two of the major drainages the line descends to elevations of 389 and 391, respectively. As a result the location involves 377 ft. of rise and fall with only 26.2 ft. of difference in elevation of the two termini.

The line is being constructed with ruling grades of 0.5 per cent in each direction instead of 0.5 per cent against



Looking North from Central City Showing the Temporary Tracks in the Background and the Site of the New Engine Terminal in the Right Foreground

west (timetable, south) bound movements and 0.75 per cent against east (timetable, north) bound movements, as established in the previous improvement work done on the Kentucky division. This change in ruling grade has been made because a tendency toward increased movement of the coal traffic in the northerly direction made it desirable to provide greater facility for the north-bound traffic. When the line is placed in service it will be possible to increase the train loading from 3,000 gross tons to 4,300 tons with the locomotives now used. A comparison of the new and old lines between Dawson Springs and Central City shows a

angle and the crossing of a branch line of the Louisville & Nashville. This obviously precluded any possibility of lengthening the yard tracks to accommodate longer trains while the obstruction imposed by the railroad crossing was further aggravated by a six-degree curve, the presence of several important street crossings at grade and the fact that the use of a joint passenger station located at the intersection of the two railroads resulted in the frequent blocking of the crossing by standing passenger trains. The inconvenience imposed by this situation will be appreciated when it is understood that the use of the switch lead at the east end of the yard frequently involved the blocking of the L. & N. crossing and the adjacent street crossings.

The correction of this situation called for a drastic change and was carried out by raising the grade on substantially the old location through the town to a sufficient elevation to effect a separation of the grades at the railroad and street crossings, while changes in both grade and alinement to the east and west of the city in a distance of four miles resulted in a reduction of distance of 3,700 ft. and a reduction of curvature from 483 deg. 4 min. to 112 deg. 16 min. Curves were limited to a maximum of 2 deg. and grades to 0.3 per cent, except at the crossing over the Louisville & Nashville, where there is one curve of 2 deg. 30 min., and 1,400 ft. of 0.5 per cent grade. The terminal improvements also provided for the construction of an entirely new yard and engine terminal east of the city in a location that permits of extensive expansion.

Heavy Grading Required

These improvements were made in the face of physical obstacles which called for an expenditure representing a very large proportion of the total outlay for the entire project. In the first place they required 900,000 cu. yd. of grading in a distance of four miles, as compared with 2,126,000 cu. yd. in the remaining 32.6 miles of the line. Furthermore, the grade changed in close quarters through the town of Central City approached the condition ordinarily encountered in urban track elevation projects and introduced much the same difficulties. For this reason the Central City improvements were handled as a separate construction project under a contract with the States Corporation of Chicago, whose equipment included 3 steam shovels, 5 standard-gage locomotives, 40, 12-yd. standard-gage dump cars, 2 narrow-gage locomotives, 11, 5-yd. narrow-gage dump cars, a locomotive crane and a spreader.

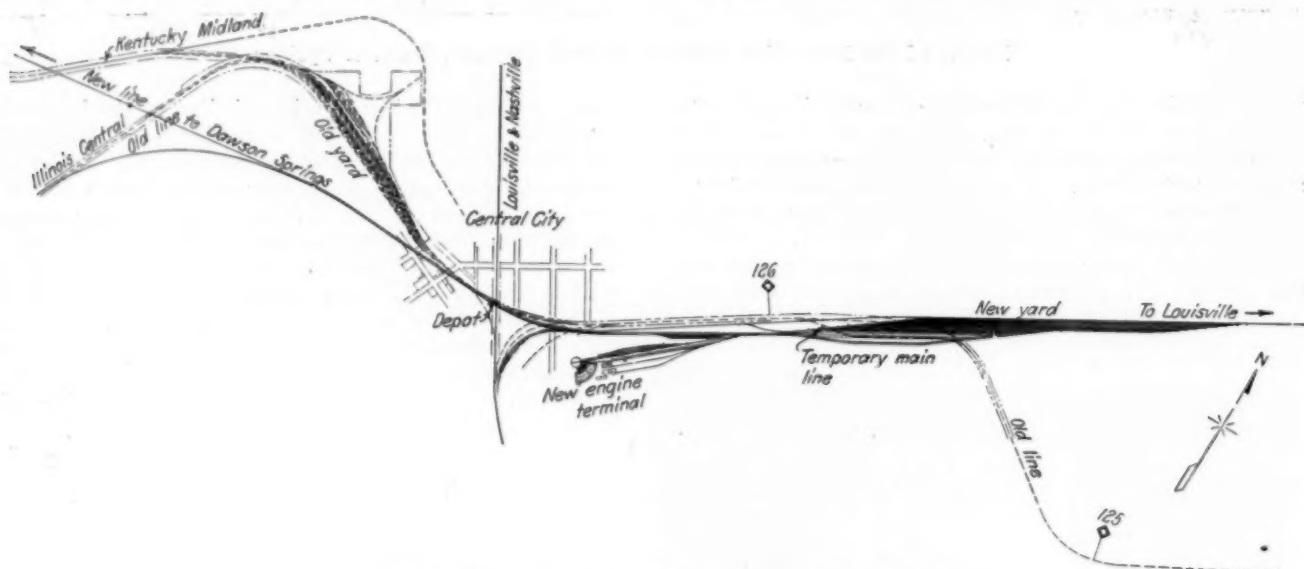
The bulk of the grading required in this portion of the

project was required in the construction of a two-mile cutoff across flats of the Green river to eliminate a wide detour in the old line at this point, which was subjected to occasional overflow to a depth of as much as 12 ft.

The principal feature of this cutoff is an embankment almost exactly a mile long, having an average height of about 40 ft. The filling material for this embankment, amounting to 823,000 cu. yd., was obtained from cuts at either end, the larger portion of it coming from the west cut which is 2,900 ft. long with a maximum depth of 51 ft., and which required 240,000 cu. yd. of earth excavation and 460,000 cu. yd. of rock excavation. A large part of the quantities involved here were required by the necessary widening of the cut and the west end of the embankment to accommodate the new yard which lies entirely within the limits of this heavy work.

The grading was complicated by the fact that the old line crossed over the site of the cut near its east end, thus presenting a situation that pointed to serious interference between the handling of traffic and the construction work. To

The work is heavier in the next three miles, comprising the descent into the valley of the Pond river. This valley is a relatively flat bottom land about eight miles wide which is crossed entirely on embankments except where the center line passes through three isolated mounds or spurs of the adjacent hills. On the west side of the valley the line rises on the ruling grade to effect the ascent of the ridge of land on which Madisonville, Ky., is located. This involves a 35-ft. fill one mile long which contains 564,000 cu. yd. of material. In the next 1.6 miles the line crosses through the ridge in continuous cuts having a total yardage of 370,000 yd., of which 185,000 cu. yd. is rock. The west descent includes an embankment averaging 25 ft. in height for the length of a mile, which contains 262,000 cu. yd. of fill. From this point west the work is relatively light to station 1740, which marks the east end of an embankment 1.8 miles long, ranging from 10 to 25 ft. in height. The next 1.5 miles entails another summit crossing which is almost entirely in cuts having a maximum depth of 60 ft. and containing a total of 257,000 cu. yd., of which approximately



Plot Showing Change of Line Through Central City

overcome this situation a narrow cut was first taken out along the south side to provide a temporary location for the main track which was crossed over to this position near the west end of the yard. This permitted work to proceed on the north or main track side of the cut without interruption until the cut and the embankment had been completed to grade for a sufficient width to permit the laying of the main track substantially in the final location. Traffic was then transferred to the new line after which work on the widening of the cut and the embankment and the completion of the yard was resumed. The work on this cut is being done with two large caterpillar shovels, a Bucyrus 88C and a Bucyrus 103C.

West of Central City a change in line avoids the excessive curvature involved in the old location and two tracks are provided as far as the crossing over the old line where the south track turns off on a wye to a connection with the old line.

Work on the New Line

The location along the line of the Kentucky Midland consists of a descent to elevation 408 at station 560, followed by a climb to a summit at station 750, west of Midland, with an elevation of 481. While the new line follows the general location of the old line there are frequent changes of line and grade so that the new line is virtually a new railroad. The grading in this district consists mainly of small units with occasional cuts and fills of large volume.

one-half is rock. The remainder of the line is characterized by somewhat more moderate grading.

Grading Methods

The material in the cuts is generally clay overlying sand stone. In some cases shale and coal are encountered. In general the clay overburden was removed before beginning the rock excavation. A number of different methods were used in blasting the rock. In one cut well-drilled shots were used for the first cut, followed by 12-ft. jack hammer holes spaced 6 ft. from center to center in both directions for the second cut. In the summit cut near Madisonville the rock was shot in one lift with well-drill holes carried five feet below grade.

Owing to the marked variations in the thickness of the earth covering over the rock the cuts were given a cross section which permitted the placing of the slope stakes on the top independent of the thickness of the clay overburden. All slope stakes were set on the basis of a prism having a 32-ft. base and 1 to 1 slopes. As soon as the rock was encountered new slope stakes were set on the rock on the basis of a 26-ft. base and $\frac{1}{2}$ to 1 slopes. This gives a larger volume of earth excavation than the usual neat section of the cut would require, but the grade line was adjusted to meet this condition in balancing the excavation and embankment. The adopted cut section has the advantage that it provides a bench at the rock surface which protects the bottom of the cut against sloughing of the earth banks. An exception to this general

plan was made in the summit cut near Madisonville which required the widening of the base width in the rock to 30 ft. to accommodate the standard-gage grading equipment used in that cut. Embankments were given a roadbed width of 20 ft. for single track.

Make Rapid Progress

All of the grading with the exception of that awarded to the States Corporation at Central City was handled in one general contract by A. Guthrie and Company, Inc., of St. Paul, Minn., who started operations on April 10, 1923, and instituted a program for the rapid prosecution of the work. To this end the equipment employed by the general contractor and eight sub-contractors included 15 steam shovels, 35 dinky



A Typical Cut Encountered on the Work, Showing the Rock Drills in the Background

locomotives, 3 standard-gage locomotives, 332 four-yard narrow-gage dump cars, 32 standard-gage cars, 2 spreaders and a derrick car. For the greater part of the time the work was carried on in two, 10-hr. shifts and rapid progress was made so that by May 1, 1924, 94 per cent of the grading was completed, an average rate of 5,200 cu. yd. per day with no allowance for Sundays, short shifts or holidays. At one time the progress averaged 12,000 cu. yd. per day.

Central City Terminal

An important feature of the work is embodied in the new terminal facilities at Central City. The need of a new yard is indicated by the fact that the old yard has a capacity of only 367 cars, whereas the average number of cars handled through the yard daily during times of good business is 900. The engine terminal turns about 24 locomotives daily.

The new yard comprises eight 80-car tracks, five 50-car tracks and the usual auxiliary facilities, in addition to a complete engine terminal. The old facilities will be abandoned except to retain enough of the yard tracks to serve the freight house and provide team trackage.

The engine terminal comprises a 100-ft. American Bridge Company turntable serving a 12-stall roundhouse and 12 radial tracks in the open. The roundhouse has brick walls and timber frame with 125-ft. stalls and pits 100 ft. in length. The engine terminal approach tracks are served by a reinforced concrete coaling station of 500 tons capacity built by the Howlett Construction Company, Moline, Ill., two Robertson cinder conveyors with two buckets each, and a brick sand-drying house served by a 12-panel wet sand bin and an elevated dry sand bin. The auxiliary facilities include the usual complement of machine shop, power plant, boiler house, blacksmith shop, etc., of a size suitable to the local terminal work. The buildings are either of frame or brick construction, except the oil house which has brick walls

with reinforced concrete floors and roofs. The necessity for considerable grading of the locomotive terminal site, calling for 17,000 cu. yd. of excavation and 28,000 cu. yd. of filling, introduced special problems in the foundations of the various terminal structures. For example, in the case of the roundhouse and turntable it was necessary to carry the foundations 14 to 17 ft. below grade with the use of 700 cu. yd. of concrete in excess of the normal quantity. Provision for sanitation and drainage entailed 3,400 lin. ft. of storm sewer and 500 ft. of sanitary sewer, together with septic tanks. The locomotive terminal was constructed under a general contract with Joseph E. Nelson & Sons, Chicago.

In addition to the yard facilities at Central City, a five-track yard will be constructed a short distance south of Madisonville for the assembly of loads and distribution of empties to serve the mine properties in that vicinity. Provision is also made for 100-car passing tracks at intervals of 3.8 to 7.6 miles along the new line.

Bridge Work

The waterway openings are provided for entirely by open deck pile trestles, concrete box culverts and reinforced concrete pipe to a maximum diameter of 60 in. Pile trestles are used to a total length of 6,960 ft. of which the greatest length in a single opening, that at the crossing of the Pond river, is 700 ft. There are 3,780 lin. ft. of concrete pipe. The largest box culvert is a double 10 ft. by 12 ft. opening at the extreme north end of the line. For the present the overcrossings of the Louisville & Nashville and city streets at Central City, as well as two overcrossings of the Louisville & Nashville in the vicinity of Madisonville, consist of pile trestles. Those at Central City will be replaced by permanent construction after the new line has been placed in service.

The location and construction of the Dawson Springs-Central City line has been under the general direction of F. L. Thompson, chief engineer and E. L. Crugar, engineer of construction of the Illinois Central, Chicago. T. H. Robertson, with headquarters at Madisonville, is engineer in charge, while S. P. Critz, J. W. Swartz, A. G. Boa and E. M. Richardson are resident engineers on the Guthrie Company contract and F. L. Phipps is resident engineer on the Central City work.

The Time Factor in Transportation

By Charles E. Lee

OPERATING STATISTICS, like most railroad statistics, published or available, are largely historical.

An operating officer is generally a poor statistician and a statistician is not, as a rule, a good operating man. At least, this seems to be the opinion each has of the other.

The operating man, whose job it is to keep things moving, is more vitally interested in what there is for him to do and what there is ahead of him, than what was done a couple months ago. This is perfectly natural, for if he does not move the business currently, the whole works are muddled up.

After all his job, for at least most of the time, is to move the largest amount of business in the shortest possible time and in time of peak loads the cost of doing this becomes incidental to the main object which is keeping free from expensive congestions and a lot of incidental troubles.

The job of the statistician seems to be to ascertain what *has been done*. This is dull stuff for an active operating man, who generally puzzles his brain over a mass of figures and tries to prove an alibi.

It is the object of this article to try to show the harrassed

operating man that prompt movement of business, aside from keeping the line open and giving satisfactory service to the patrons of his road, may actually be an economical thing to do. It is axiomatic that while good service may not always pay, poor service never can.

There are no statistics available from which the character of service rendered in time, can be measured. The time factor in transportation has been ignored, except as influenced by complaints of those requiring transportation service. Its economic value has not received the attention it should. This is probably due to the fact that transportation studies from which the theories, so long accepted as sound, were largely made prior to the time per diem charges for car use were established.

Why not establish a statistical unit of service? This can be done, by compilation of available data, on each road, almost immediately after the close of each day's work.

Up to the capacity of the transportation machine on each division and on each road as a whole, the percentage of cars moved currently of the total to be moved should on an average remain nearly constant, regardless of the amount of business done. Therefore, the per cent of cars moved currently of the total to be moved makes an important unit for the measurement of transportation service. This unit not only shows with reasonable accuracy the situation at each yard, on the division or on the railroad as a whole, but forecasts, during periods of normal or heavy business, increases or decreases in other important operating units.

The tabulation on the opposite page made of car movement of one of the largest roads in the United States will prove interesting.

Of course ton-miles per car per day is an all inclusive factor of car utilization. However, this is influenced by causes not entirely within the control of the railroad officers. It will be interesting to note that increase in the suggested service unit has a large effect on the ton-miles per car day, as shown in the above illustration.

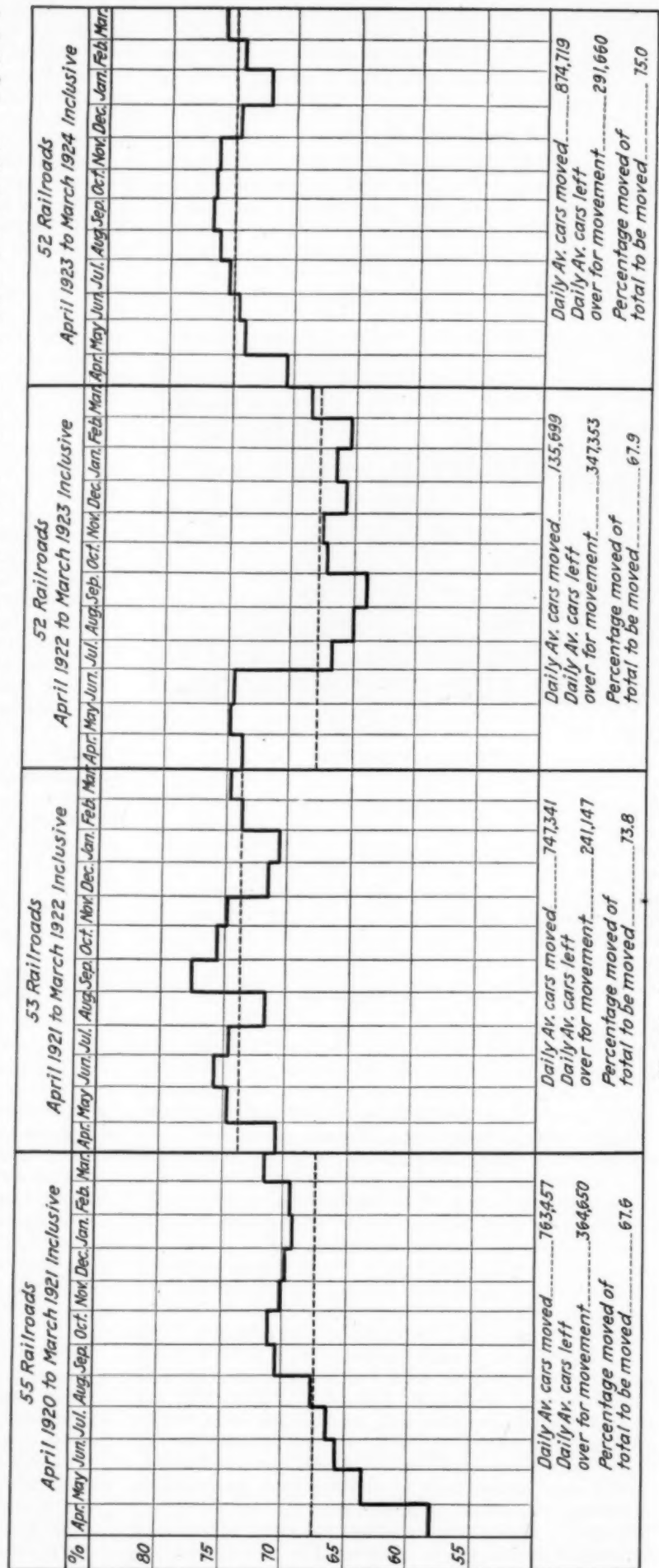
It is also found that increase in this unit is shown in the cars awaiting movement.

Based upon an average daily movement of 50,000 cars, when the movement is 65 per cent of the total to be moved, the average number of cars awaiting movement will be 26,923. If 70 per cent are moved the cars awaiting movement will be 21,428 and if 75 per cent are moved currently then there will be only 16,666 cars awaiting movement. Thus, if 75 per cent of the cars to be moved are moved currently there will be a saving of 10,257 car days per day as compared with a movement of 65 per cent of the total to be moved.

This saving can be made by speeding up road movement out of yards and terminals, without increasing the daily car movement.

The saving in car days is indirectly a credit to cost of train and yard operation and obviously increase in car days should be a debit to such costs. Slow movement of cars increases the time cars remain idle, when no revenue is derived from their use, and is generally reflected by an increase in cars on line.

Under present per diem rates a freight car has an economic value of one dollar per day.



Monthly Average Per Cent of Cars Moved of Total to Be Moved

Conversely the cost of car possession is approximately the same amount, whether cars on line are owned or leased.

Total cars to be moved are readily obtained by adding the cars moved in each 24 hour period, to the number of cars on hand for movement, at the end of the same period and obviously the percentages moved of the total to be moved can be found by dividing the cars moved by the total cars to be moved. This percentage can be readily translated into average hours car awaited movement.

One of the advantages of this unit would be the promptness with which it could be obtained for each yard, termi-

	Percentage moved of total to be moved	Index No.	Car miles per car day	Index No.	Ton miles per car per day	Index No.
January	57.5	100	20.7	100	455	100
February	55.9	97	20.0	97	444	97
March	57.7	100	21.9	106	483	106
April	62.1	108	23.7	114	519	114
May	67.8	118	25.4	122	544	119
June	68.8	120	25.8	125	565	124
July	68.3	119	26.0	126	568	125
August	68.9	120	25.4	123	561	123
September	68.7	119	24.5	119	538	118
October	67.8	118	23.9	115	520	114
November	68.3	119	23.0	111	484	106
December	66.9	116	20.4	99	414	91

nal, or the road as a whole. It would give a clear indication of the character of service being given.

The chart shows the percentage of cars moved of total to be moved, by more than 50 Class I railroads and indicates periods of operating handicaps and spasmodic spurts of transportation efficiency, for four years ended March 31, 1924, as no other available, or published, statistical unit does.

This chart gives the percentage as applied to road movement only. This unit could be applied to cars for connections or local placement or any sub-division of these.

Railroad Labor Bill Taken From Committee

WASHINGTON, D. C.

THE FIRST FIGHT involving railroad legislation to reach the floor of either house of Congress this session was staged in the House of Representatives on May 5 when the House voted, 194 to 181, to discharge the committee on interstate and foreign commerce from consideration of the Barkley bill, drafted by the railroad labor organizations, to abolish the Railroad Labor Board and create a number of bi-partisan boards of adjustment and a board of mediation and conciliation. The House then voted, 194 to 172, to take up the "immediate" consideration of the bill and later by a vote of 165 to 136 to limit the debate to three hours, but a filibuster by the republican organization kept the subject in a parliamentary tangle until nearly midnight and the speaker ruled on the following day that its consideration under the House rules could not be resumed until Monday, May 19, one of the two days of the month set aside for legislation taken up under suspension of the rules.

The bill was taken from the committee, in an effort to jam it through the House without hearings, on the ground that the committee had not held hearings on the bill within 30 days after its introduction. This was under the new rule forced by the "progressives" after holding up the organization of the House at the beginning of the session, under which a committee may be discharged after 30 days upon a motion signed by 150 members. Such a motion was made by Representative Barkley and signed by 154, although Chairman Winslow showed that the committee had not refused hearings but had merely given another bill, which had been introduced earlier, priority.

The discharge of the committee was effected mainly by a combination of democrats and "progressives" who are of-

ficially republicans. Forty republicans voted for it while 28 democrats voted against it.

During the days before the vote on the motion several speeches against the proposal to take the bill from the committee, including some criticism of the bill itself, had been made by Representatives Tincher, Winslow, Mapes, Sanders, Hawes and Denison, while the bill was defended by Representatives Barkley and Huddleston. When the matter was brought up on May 5 Representative Sanders made a point of order against the motion on the ground that under the rules the committee could not have reported the bill because it contained an appropriation in a legislative bill. This was overruled but the efforts of the republicans, under the leadership of Representative Longworth, to gain further time were continued throughout the afternoon and evening session during the debate on the parliamentary situation created by the application of a new rule and the question of the time to be allowed for debate. There were some eighteen roll-calls during the debate, which included very little discussion of the merits of the bill itself, and motions to adjourn and points of no quorum were frequently made. Votes were taken on Representative Longworth's motion to allow ten hours' debate and on one by Representative Blanton to allow 24 hours, but the three-hour proposal by Mr. Barkley prevailed.

Representative Cooper of Ohio has introduced a bill, H.R. 9009, as a substitute for the Barkley bill and also for the present law, which would abolish the Labor Board and provide for the creation of voluntary boards of adjustment by the carriers and employees who would not be government officials. It also provides for a board of mediation and conciliation and for arbitration procedure.

Frank W. Noxon, secretary of the Railway Business Association, sent a letter to Chairman Winslow of the House committee on interstate and foreign commerce saying that if the Barkley labor bill incident had aroused his curiosity or that of any of his colleagues to know "precisely how the voters react when organized labor advises the punishment of independent Congressmen at the polls," they might derive some impression from a computation of the results of the election of 1920 which was enclosed with the letter, showing that of 209 representatives who had voted for the transportation act and ran in primary or election only 14, or 6 per cent, were defeated, while of 128 who voted against the act and ran in the primary or election, 46, or 35 per cent, were defeated.

A warning that the public interest is jeopardized by the Howell-Barkley bill was sounded by Julius H. Barnes, president of the Chamber of Commerce of the United States, in a bulletin sent to its twelve hundred organization members. A vigorous protest against the measure has also been lodged by the National Chamber with the Senate Committee on Interstate Commerce. The bill is characterized by Mr. Barnes as "a denial of the rights of the public" and "a most decided step backward."

"The bill," the Chamber said in its protest to the Senate committee, "proposes as a substitute for the compulsory public investigation required by the present law, only voluntary arbitration, thus leaving it within the power of either party to prevent any public ascertainment and publication of facts by simply refusing to accept arbitration. The voluntary arbitration proposed would be restricted to such specific points as might be agreed upon in advance by the parties to the controversy, thus interfering with the full measure of public investigation, even when arbitration is accepted." The bill, the Chamber added, is a proposal to return to the status quo ante which existed prior to the federal operation of railways incident to the war. That status, it asserts, was unsatisfactory to carriers and their employees and was also unsatisfactory to the public interest as evidenced by many declarations of the public view similar to those of the National Chamber itself.

Labor Board Establishes Telegrapher's Working Rules

NEW RULES governing working conditions of telegraphers were ordered incorporated in schedules governing this class of employees by the Railroad Labor Board in Decision No. 2374. This decision was rendered in a dispute between the Order of Railroad Telegraphers and the Boston & Maine; the Chesapeake & Ohio; the Cleveland, Cincinnati, Chicago & St. Louis; the Galveston, Harrisburg & San Antonio; the Hocking Valley; the Houston & Shreveport; the Houston & Texas Central; the Houston Belt & Terminal; the Houston East & West Texas; the Iberia & Vermillion; the International-Great Northern; the Kansas City Southern; the Lake Charles & Northern; the Louisiana Western; the Morgans, Louisiana & Texas; the Seaboard Air Line; the Southern Pacific-Pacific System; the Texarkana & Ft. Smith; the Texas & New Orleans, and the Virginian. The new rules established are as follows:

Scope

This schedule will govern the employment and compensation of telegraphers, telephone operators (except switchboard operators), agent-telegraphers, agent-telephoners, power men, lever men, tower and train directors, block operators, staff men, and certain agents.

Suspension of Work

Prior to the assertion of grievances as herein provided and while questions of grievances are pending, there will be neither a shut-down by the employer or a suspension of work by the employee.

Automatic Printers

In any telegraph office, where automatic printers are used, telegraphers will be used in the operation of same, and the position shall be included in the schedule.

Emergency Service

Regularly assigned employees, taken from their assigned positions, to be used at derailments and similar emergencies will receive the salary of their positions. Extra employees in this service shall receive not less than the minimum rate of telegraphers. While away from home station in such service, telegraphers will be allowed legitimate and necessary expenses. Regularly assigned employees called for this service will be paid from the time ordered to leave home station until return for all time worked, in accordance with the practice of the home station, and straight time rate for all time waiting or traveling. Extra employees will be paid from the time ordered to leave home station until return and will receive overtime rates for all time worked in excess of eight hours and straight time for all time waiting or traveling.

Dead Heading, Extra Employees

Extra employees will be paid for the time consumed for dead heading and relief service but shall not receive compensation for this service to exceed one day's pay of the employee relieved for each 24 hours or fraction thereof, en route to and from the assignment. This will not apply to extra employees, dead heading to assert seniority rights over other extra employees.

Transferring

Time lost in transferring from one station or position to another shall be paid for at the rate of the position from which transferred, excepting such time as may be lost of the employee's own accord. The word "transferring" includes transfer in the exercise of seniority and also time lost checking in and out of positions. Employees transferred by order of the carrier or to accept a bulletin position shall be furnished free transportation for themselves and family.

Filling "Star" Positions

This question is remanded to the parties at interest for conference and further negotiation.

Classification of Employees, New Positions, Etc.

Where existing payroll classification does not conform to Rule 1, employees performing service in the classes specified therein shall be classified in accordance therewith. When new positions

are created, compensation will be fixed in conformity with that of existing positions and similar work and responsibility in the same seniority district.

Express Commissions

When express or Western Union commissions are discontinued or created at any office, thereby reducing or increasing the average monthly compensation paid to any position, prompt adjustment of the salary affected will be made conforming to rates paid for similar positions.

Filling Positions

Positions covered by this agreement will be filled by employees taken from the seniority list and incumbents will be considered as regular employees.

Promotion Basis

Employees covered by these rules are in line for promotion and where qualifications are sufficient, seniority will prevail.

Retention of Seniority by Promoted Telegraphers

Employees covered by this agreement accepting promotion shall retain and accumulate seniority and, if they return to the service covered by these rules, may displace the junior regularly assigned men and thereafter exercise their full seniority rights to any subsequent vacancy or new position according to the rules of the agreement. The request that employed train dispatchers be placed on the telegraphers' seniority list as of date of employment is denied.

Incidental Duties

Assignment of duties other than those usually performed by telegraphers may be handled by the employees to their committee under the grievance rules of the schedule.

Teaching Telegraphers

Telegraphers will not be required to teach telegraphy but they may do so with the consent of the carriers.

Flagging Crossings

Request of the carrier for elimination of rule exempting certain employees from flagging crossings or attending gates is denied.

Additional Compensation

Where telegraphers are required to handle crossing gates they will be paid \$5 for each set of gates in addition to their regular salary.

Vacation

In the opinion of the Railroad Labor Board, the question of vacations with pay is one which should be left at this time with the carriers and their respective employees for the adoption of rules mutually agreed upon.

Sunday and Holiday Assignments

Elimination of rule governing Sunday and holiday assignments at specified stations is sustained. Request for elimination of rules providing for maintaining hourly rate when agent is relieved of telegraphing and furnished an operator is sustained.

Reduction in Force

When reducing forces, seniority rights shall govern. When forces are increased, employees shall be returned to service in the order of their seniority rights. Employees desiring to avail themselves of this rule must file their addresses with the proper official at time of reduction, advise promptly of any change of address and renew address each 90 days. Employees failing to do this or to return to the service within seven days after being notified, or give satisfactory reason for not doing so, will be considered out of service.

Leave of Absence

When granted leave of absence, an employee will not receive pay for time consumed in checking out when laying off or checking in when returning to service.

Cleaning Batteries

Employees will not be required to clean main line or local batteries at stations where more than 10 cells are used. This rule will not apply to batteries used in the operation of interlocking plants or signals.

Can the Grade Crossing Be Made Less Dangerous?

Railway and Public Authorities Consider Ways of Reducing Loss of Life at Crossings

THE CONFERENCE to discuss the grade crossing accident problem called at the instance of the National Association of Railroad and Utilities Commissioners met at the Congress Hotel, Chicago, on April 30 and May 1. A brief report of the proceedings was given in the *Railway Age* of May 3, page 1110.

The conclusion reached by the conference was that the separation of grades at all railroad-highway crossings is physically and financially impossible of attainment in the lifetime of men now living and that relief must be sought through a variety of measures which were summarized in resolutions as follows:

(1) The elimination of grade crossings should proceed in an orderly and expeditious manner. The creation of new crossings should be avoided wherever possible.

(2) Highways which cross and re-cross tracks should be relocated.

(3) Adjacent crossings should be consolidated.

(4) Physical conditions at crossings should be favorable to the highway traveler.

(5) The proximity of railroad tracks should be designated by standardized, uniform and unmistakable indications.

(6) All extraneous signs and devices should be excluded from the immediate vicinity of grade crossings.

(7) Railroads should give ample notice of the approach of all trains.

(8) The right to drive a motor vehicle on a public highway should be restricted to qualified possessors of a license issued by proper authority and revokable for cause.

(9) Motor vehicle accidents involving personal injuries should be reported to public authorities for statistical and other purposes.

(10) Motor-driven carriers for hire upon highways should be under the jurisdiction of railroad and utilities commissions.

(11) Such commissions should be empowered to require all such carriers for hire to stop and take full precautions at railroad crossings.

(12) In states where a full stop is not required by law motor drivers should be forbidden to exceed a speed of 10 miles an hour within 300 ft. of any railroad crossing until positively assured that no train is approaching.

(13) Red should be used only to indicate imminent danger and positive stop. Cautionary indications, including the rear lights of automobiles should be of some other color.

(14) Crossing flagmen should be invested with authority to arrest persons disregarding stop signals.

(15) Public interest in the prevention of highway-railroad crossing accidents should be cultivated by every available means.

(16) The principles of safety should be included in the curriculum of every school.

(17) Further conferences should be called by the National Association of Railroad and Utilities Commissioners as occasion warrants.

(18) The problem of highway crossing accident prevention demands a continuance of the sincere and cordial co-operation established at this conference. (The chairman was authorized to designate some one to whom communications may be addressed, and interested organizations were requested to designate representatives to assist in co-ordinating effort.)

(19) A general realization of individual, personal responsibility will bring about immediate mitigation of crossing hazards.

Frank Milholland, president of the Board of Railroad Commissioners of North Dakota, was chosen as the person to whom communications relating to highway crossing accident prevention might be addressed.

The Committee on Devices offered a resolution, which was adopted by the conference, requesting the co-operation of the Bureau of Public Roads, the American Association of State Highway Officials, the American Automobile Association, the American Railway Engineering Association, the American Railway Association, the National Association of Police and other associations of national scope in recommending national standards for state adoption. The conference pledged itself to make every reasonable and consistent effort to have such standards as result from this conference enacted into law, and adopted in the several states.

Grade Separation Thought Prevails

Almost at the opening of the meeting, the thought was expressed that relief lay in grade separation. This idea was strengthened by a letter received from President Coolidge which read in part, "The ideal, of course, is complete separation of grades of railroads from highways, and as the one and final solution of the problem it should be accomplished as soon as possible. It is realized, of course, that complete separation is beyond realization in the lives of those now living. This for two reasons—first, the magnitude of the task; second, the utter inability to pay the necessary cost."

"Undoubtedly much can be accomplished immediately by surrounding highway crossings with proper safeguards, giving suitable notice of the approach of trains and awakening in the mind of the traveler a full sense of personal responsibility for careful action in approaching and passing over railroad crossings."

The thought expressed by President Coolidge re-appeared in the address of the first speaker, William D. B. Ainey, chairman of the Pennsylvania Public Service Commission, who spoke on the elimination of grade crossings and then upon their protection. He said that the solution of the grade crossing problem lay in the elimination of crossings under a program so arranged that both the railroads and the states would be able to participate in the work and its financing. He urged that the money be expended where the most lives can be saved in the shortest time. While considering protection, he expressed approval of the emphasis placed on train control. He analyzed protection as a warning and policing against approaching trains and not of the presence of a railroad track, and favored crossing watchmen over gates. He also urged those interested in the subject of grade crossing casualties to stimulate automobile associations to help harmonize state laws and to educate citizens to be more careful.

The Railroad Viewpoint

H. A. Rowe, chairman of the Committee on Prevention of Highway Crossing Accidents of the American Railway Association, spoke on "The Crossing Problem from the Railroad Standpoint." He outlined the work done by the association and the railroads and the results which have followed their efforts. He also outlined a program for the education of the public in the necessity for the exercise of care at crossings, which he called the only present solution of the problem in view of the impossibility of separating grades within a few years. In his address he included reference to the used car situation which makes it possible for those

mentally unfit to drive a car, to secure one if they have five or ten dollars to pay down. His address follows in part:

The problem of preventing the collision of motor cars and trains at highway crossings is of such moment as to demand serious thought upon the part of those whose duties include the construction and maintenance of highways, the construction, maintenance and operation of railroads, the regulation of traffic on highways and on railroads, the users of highways, our legislatures and courts which prescribe and direct the fixing of responsibility for alleged negligence and the public which suffers the shock of such tragedies and finally pays the bill. During the past 25 years our continental population has increased 68 per cent. Fatal railroad crossing accidents have increased 345 per cent and injuries to persons 652 per cent. During that period registered automobiles, starting from the zero point, reached the vast number of 15,092,177 on December 31, 1923.

There are 256,362 grade level crossings upon Class 1 railroads in the United States. In the six years from 1917 to 1922, inclusive, there was an average of 1,818 deaths and 4,898 injuries per year at railroad crossings, while during the past year 2,268 persons were killed and 6,314 injured, making a total of 8,582 casualties in the one year at railroad highway crossings. Approximately 2,800 persons will be killed and 8,000 injured at railroad crossings during 1924. Eighty-four per cent of all crossing casualties involve motor cars.

The railroads are also concerned about the crossing accidents from another angle. In 1922 there were 28 train derailments due to crossing accidents in which 8 trainmen and 8 passengers were killed, while nine trainmen and 105 passengers and one other person were injured.

Crossing Elimination Prohibitive in Expense

The work of grade crossing elimination should proceed along orderly and reasonable lines. That the solution of the problem, however, is not to be found in recommendations for the immediate removal of commonly regarded hazardous crossings is borne out by the fact that 63 per cent of crossing accidents occur where the view of the traveler is open and unobstructed and where the occurrence of an accident is inexcusable.

Several years ago competent engineers expressed the belief that the average cost of elimination of crossings by separation of the grades would approximate \$50,000 per crossing. Since then there has been such an advance in the costs of labor and material that it is believed that \$75,000 per crossing is nearer to the average cost of city and rural elimination. In addition the railroads must provide for additional expenditures on account of the elevation of tracks, stations, yards, etc., at their expense.

On the basis of \$75,000 per crossing it is readily computed that nearly \$19,000,000,000 would be required for the general elimination of crossings, an amount greater than the preliminary estimate of the total value of all railroad property made by the Interstate Commerce Commission. The amount involved in crossing elimination is almost equal to the entire resources of all the national banks of our country. It is very close to the present public debt of the United States. Interest alone would amount to \$3,000,000 a day.

During the calendar year 1920, 336 crossings were eliminated on all of our railroads; in 1921, 485, and in 1922, 705, which makes a total of 1,526 wiped out in three years. However, in the year 1922 alone, 4,560 crossings were added, leaving a net increase for the year of 3,855. The elimination of 705 crossings in 1922 cost \$70,000,000. It was well spent.

In 1907, before there was definite organized safety effort on American railroads, 4,534 employees were killed on duty, while in 1921 fatalities among railroad employees on duty were only 1,146, a reduction of almost 74 per cent, notwithstanding the fact that many more employees were in actual service in 1921 than in the former year. This result was attained by thoughtful consideration of the causes of railway employee accidents by the removal of such causes where practicable, by the establishment of organizations for safety and by the cultivation of safe practices upon the part of the workmen themselves, plus an everlasting plugging away at a humane and worthy cause. It is quite within the probabilities that those general principles which have been helpful in diminishing railroad employee accidents may be applicable, with variations and adaptations, to the problem at hand.

Present Crossings Can Be Made More Safe

First let us consider the crossing itself. No additional grade level crossings over railroad tracks should be created except in cases of actual necessity and where no other course seems feasible. Highways which cross and recross tracks should be relocated so as to parallel the railroad and obviate such unnecessary crossings. Efforts should be made to dispense with grade crossings within a reasonable distance of others by making one crossing do the work of several.

Crossings should be designed and relocated when feasible so as to be at right angles to the railroad tracks. They should be of even grade, of sufficient width to accommodate the maximum travel, without construction defects and free of unnecessary barriers to view. Highway approaches should be maintained in good order, with suitable notice of the existence of railroad tracks, and with a complete absence of distracting commercial advertising. The physical conditions at railroad crossings should be at least fair if not favorable to the motorist.

Ample notice should be given to the highway traveler of the proximity of railroad tracks. In addition to a system of uniform standard crossing signs upon the railroad right-of-way, advance warning discs should be erected and maintained where desirable, about 300 ft. from the crossing.

The attention of highway commissioners should be directed to the system of marking the notice of approach to railroads upon the highway itself, as is now practiced in several states, notably New York, Maryland, Massachusetts, Nevada, North Carolina, Michigan, Washington and West Virginia. About 300 ft. from the crossing two parallel white lines one foot wide and five feet apart should be painted across the highway at right angles to it. Between the parallel lines the letters "R. R." should be placed. The number of railroad tracks to be crossed may also be indicated. One hundred feet from this marking there should be another white line one foot wide at right angles to the highway as a secondary notice. At a suitable distance from the railroad track there should be placed a barred line three feet wide painted similarly to the standard marking upon crossing gates. This last barred marking should be parallel to the railroad tracks as an indication, day or night, not only of the presence of a danger zone, but the angle from which trains may be expected.

It is a generally accepted fact that a driver usually keeps his eyes glued to the road. If the warning sign is upon the road itself there is every probability that the driver will observe it and conduct himself accordingly. This plan is adapted to all modern road construction and entails slight upkeep. Important macadam or dirt roads can be designated in the same manner by using a concrete slab covering the width of the highway and running for a distance of 350 ft. each side of the crossing.

There are only two objections to this method of marking the approach to railroad crossings. (1) Its cost, which is trifling, and should be dismissed from serious consideration. Repainting twice a year is sufficient on a much traveled highway. (2) That snow will blanket it in winter, particularly in our northern zones. This is true, but good has been accomplished when the travel is greatest.

Railroads Should Aid All

Reasonable Protective Measures

Railroads should conform heartily to all reasonable and practicable regulations calculated to increase the safety of travelers, employees and those traversing their tracks at highways. There should be sincere co-operation with proper authorities to maintain railroad property and equipment in good order at crossings and approaches. Manual and mechanical safeguards at crossings should be efficient and suitably maintained. Consideration should be given to those devices which will assure maximum safety rather than be dependent upon the faltering human element. There should be no unnecessary blocking of crossings nor should cars be left on sidings close to crossings when this can be avoided.

Ample audible warnings by whistle and bell should be given of the approach of trains. The law of each state should be strictly adhered to in this respect. Crossing attendants should be active, mentally alert and imbued with their responsibilities. The vesting of such attendants with police power might well be considered. Drivers are more fearful of a summons than of probable danger.

The construction of the automobile has reached a high state of development. Every car should be equipped with clear vision for the driver in three directions—forward, right and left. The right and left vision should be improved to afford a greater range of observation of acute angle crossings. The brakes should be more than equal to any emergency. Periodic brake tests and examinations should be obligatory. A red light should never be displayed except as an imperative order to stop. Some other color should be substituted for the rear lights of cars.

Standards of physical, mental and temperamental qualifications for drivers should be established and the unfit weeded out. The right to drive any motor vehicle upon a public highway should depend solely upon the driver's possession of a license issued under strict regulations and revokable for cause. Cause should include incompetency, recklessness, repeated violation of safety regulations, intoxication, etc. It should be the duty of every owner, driver and insurance carrier of every automobile involved in an accident causing personal injury to report the full details thereof to designated state officials for the purpose of affording opportunity for further investigation and to act as a check-up on the driver's proficiency and regard for public safety.

Drivers Should Take Reasonable Precautions

A system of standard uniform signs and other indications of the existence of railroad crossings having been established and the burden of warning of the approach of trains resting upon the railroad, definite rules should be formulated and enforced for the conduct of the traveler upon the highway. It is not enough that the driver of a car be required to act in an ordinarily prudent manner, but because of the possibility of disastrous results of his indiscretion he should be required to exercise the highest degree of care in the operation of his car and be charged with proportionate moral and legal responsibility. When, by statute or order of proper authority, he is commanded to bring his car to a full stop before passing over railroad tracks, non-observance should result in prompt penalty and in case of accident should be evidence of negligence. Five states have definite and arbitrary stop laws—Montana, North Carolina, Tennessee, Virginia and Mississippi.

At all other crossings it should be compulsory for every driver, under penalty of negligence, to have his car in such control 30 to 50 ft. from a railroad crossing that the car can be brought to a complete stop in its own length if necessary. The observance of such a rule need not retard highway travel nor would it be a serious burden upon the traveler. It would prevent a high percentage of automobile crossing accidents.

Railroad and utilities commissioners and similar bodies should be clothed with full authority to regulate the operation of motor driven vehicles for hire, freight and passenger. This includes public and school busses, and also cars containing explosives or highly inflammable products. They should require the stopping of such vehicles before reaching railroad crossings. Sixteen states have such powers and exercise them. The other 32 states should be likewise empowered. Investigation of crossing accidents involving highway carriers for hire should be within the province of such commissions. Power to impound the vehicle and suspend the license of a negligent driver should rest with the commission. Consideration should be given to police enforcement of traffic regulations at railroad crossings. It is just as much and as great a public duty to protect at the railroad as at dangerous street intersections.

Standard Uniform Rules of the Road

N. H. Loomis, general solicitor of the Union Pacific, spoke on "Standard Uniform Rules of the Road." He described laws governing the use of highways and suggested remedies in the enforcement of such laws which would reduce casualties. An abstract of his paper follows:

The most important law of the road in relation to railroad crossings is the one which requires all travelers to "stop, look and listen" before going upon a railroad track. In most of the states the law with respect to stopping, looking and listening is a common law rule which is enforced in personal injury cases. It is variously interpreted in the different states, but its violation is not equivalent to the breach of a positive legislative enactment. If it were embodied in a statute declaring its violation to be a misdemeanor with a reasonable penalty attached it would be given greater consideration by the public and would be much easier to enforce. Several states have statutory regulations of this nature. In Illinois, Montana, North Carolina, Tennessee and Virginia there are statutes with various exceptions requiring all motor vehicles to come to a full stop before crossing a railroad track. In California, Nebraska, New Jersey, Ohio, Wisconsin and Washington there are statutes requiring motor busses and carrier cars to come to a full stop before crossing railroad tracks. These statutes and regulations recognize the principle involved, and argue most convincingly for positive statutory enactments in all of the states, making it a misdemeanor for all vehicles, whether used for purely private purposes or for carrying passengers, to enter upon a railroad crossing without first coming to a full stop.

Suggested Legislation

It is also highly desirable that the laws should be as uniform as possible and I would suggest as a reasonable form to use, the following:

Section 1: Every person operating a motor vehicle upon a public road shall immediately, before crossing any railroad track at grade, other than a crossing at which there is a gate or watchman, bring said vehicle to a complete stop at least 50 feet from the nearest rail of said track, and carefully look in both directions for approaching trains before crossing said railroad track.

Section 2: Every person violating the provisions of the preceding section shall be deemed guilty of a misdemeanor, and

upon conviction thereof shall be fined in any sum not less than Five Dollars nor more than \$25, or shall be imprisoned in the county jail for a period not exceeding 30 days, or both, in the discretion of the court.

An immense sum of money will be required to comply with the Interstate Commerce Commission's plans for train control. It has been conservatively estimated at \$200,000,000 for equipping 141 divisions in the United States. This amount could undoubtedly be invested to much greater advantage if invested in the elimination of the most dangerous grade crossings and in devices for the protection of grade crossings which cannot be eliminated.

Expenditure Must Be Kept Within Limits

The protection afforded by crossing gates, automatic visual and audible signals and crossing watchmen is obvious and should be utilized at dangerous crossings; but the matter of expense cannot be lost sight of. Railroads are a necessary public utility and there is a limit to the operating expenses which they can be forced to incur. This is especially important when we consider the urgent demand for lower rates. It adds emphasis to the thought that the public should share in the expense of these safety devices and that the railroads should not be left to bear them alone. That states and municipalities have ample power to require the use of protective devices cannot be questioned, although the extravagant use of the power might be controlled by the courts as an unreasonable burden upon interstate commerce.

The difficulty of persuading drivers to stop, look and listen leads one to think that it may be practicable to use devices that will compel drivers to slow down. I have in mind a plan suggested by the use of little circular parks placed at the intersection of all streets in a certain part of Topeka, Kan. They were put there intentionally to prevent fast driving. Drivers were not very fond of the obstruction but it served the purpose and fast driving at the street intersections is impossible. Under the plan I have in mind the highway could be divided at railroad crossings, a stop sign placed in the center of the highway at the point where the road divides, and the two forks of the road so curved that slow speed would be necessary.

From the Viewpoint of a State Commissioner

Frank Milholland, president of the North Dakota Board of Railroad Commissioners, spoke on "The Prevention of Accidents at Grade Crossings." He touched upon grade crossing elimination, and protection and the education of the public and urged an active campaign to reduce casualties. An abstract of his paper follows:

While all grade crossings are potentially dangerous, and are so recognized, little systematic work has been done to eliminate them and I am constrained to say that in some instances certain railroads have vigorously opposed crossing elimination on heavily traveled highways where separation of grades was not only feasible but afforded the only adequate remedy. That the railroads owe a duty to the public to make crossings as safe as possible will not be questioned. Laws have been passed in many states requiring warning signs to be erected and maintained on the highways. Unfortunately the warning signs are not uniform and this is one thing which should be corrected. Bell signals, wig-wag signals and various other warning signs are now in use in all parts of the country, but no warning sign has ever been invented which will entirely eliminate accidents at railroad grade crossings because of the tendency of careless drivers of automobiles to disregard warning signs. We must inevitably come to the conclusion that while warning signs are a factor in preventing accidents, some other means must be suggested that will bring to the attention of the public the necessity of exercising care at railroad grade crossings.

It is the earnest desire of all to protect life. Following a serious accident, there is always activity on the part of the public to prevent a recurrence. Naturally the first remedy suggested, and really the only positive one which springs into the mind, is the elimination of crossings by separation of grades. Undoubtedly there are many cases where this can be done, but generally speaking it is not practical because in this country there are approximately a quarter of a million crossings with highways at grade.

Education of Public Essential

In analyzing the situation, after a study extending over a period of several years, we have formed the opinion that the ultimate solution of the crossing problem lies in educating the

public to the necessity of exercising care. Our task, then, briefly stated, is to enlist every citizen in a safety organization. This is to say, we must start with the child in the school and instill into his or her mind the danger of crossing tracks without first determining whether it is safe. The next move is to enlist the owners and prospective owners of cars. This can be accomplished by means of wide publicity.

Already we have a vast array of workers organized and ready for action, including the state railway and utilities commissions, the state highway commissions and the railroad organizations. With a little effort, we can obtain the help of the school children. Teachers in public schools, without any loss of time from regular work, may greatly assist in the campaign by making it a point to present to the children some material to be found upon this subject. Boy scout organizations may be utilized with splendid results. The automobile licensing departments of every state should be furnished with literature which will give it a wide circulation. Organizations which employ a large number of drivers may be induced to follow the splendid example set by the Standard Oil Company of Indiana. Every driver of a motor vehicle belonging to this company signs a pledge to stop at all railroad crossings.

Uniformity of Crossing Protection

C. L. Bardo, general manager of the New York, New Haven & Hartford, and chairman of the Committee on Grade Crossing Protection and Trespassing of the American Railway Association, spoke on "What Has Been and is to be Accomplished in Establishing Uniformity of Crossing Protection." He referred to the elimination of grade crossings, the rule of signs in different states, the qualifications of drivers, the standardization of life and made a number of suggestions for the conference to consider. An abstract of his paper follows:

We find ourselves at the present time in a situation where numerous activities are devoted to the prevention of accidents. The various states have passed laws providing for protection or establishing commissions which are given authority to compel the railroads to take action which they deem necessary. The railroads themselves, individually and collectively, are devoting their efforts, first, to carrying out their own responsibilities and secondly, to urge in every possible way upon the public the necessity of cooperating in these efforts to reduce accidents. In addition, we have other semi-public bodies and groups of citizens who, in conference, meetings, and through the press, are urging upon the general public its responsibility, and again, we have the activities of the automobile associations. Possibly, the greatest difficulty in the situation as it exists today is the diversity of these efforts. While all of these activities are pointed in one way or another to the same end, the methods are entirely different and result frequently in confusion. A great step forward could be taken if, through the co-operation of these numerous activities, standardization of methods and practice could be obtained. The laws of seven states provide that there shall be a warning sign with words "Railroad Crossing": two states, "State Law. Stop"; one state, the words "R.R. Crossing"; three states "Railroad Crossing—Look Out for the Cars While the Bell Rings or the Whistle Sounds"; one state "Railroad Crossing—Look out for the Locomotives"; one state "Railroad Crossing—Stop, Look and Listen"; four states "Look Out for the Cars"; one state "Look Out for the Locomotive"; one state "Look Out for the Cars When You Hear the Whistle or Bell"; one state "Main Line—Danger—Stop"; one state "Danger," while six states provide that there should be a sign of some sort with large or distinct letters or with red letters. In 16 states the law provides for state commissions which shall have authority to prescribe the character of warning signs, while in five states there is no law or commission authority. In the efforts to provide for a warning indication placed 300 ft. or more in advance of the crossing, laws have been passed in five states, these laws being very nearly uniform.

It is generally recognized that under any reasonable form of regulation the operation of trains and vehicles on the highway at railroad grade crossings can be conducted with absolute safety. It simply requires that there be recognition given to the fact that the railroad train has the right of way; that it is impracticable to stop these trains at grade crossings, and that a reasonable degree of care and caution on the part of the user of the highway will enable him completely to escape danger of collision or accident and to eliminate entirely the growing casualty list which greatly discredits the intelligence and ability of the American public to regulate itself.

In our principal cities substantial recognition has been given to the control of traffic on the streets by the utilization of vari-

colored lights accompanied in some instances by officers on the ground, but in many instances, only by the lights themselves. The regulation of traffic on the highways in this manner is, after all, simple, comparatively cheap, reliable and efficient. We believe that the wig-wag or two red lights, horizontally arranged, alternately flashing, visible to the man on the highway both day and night, represent the most effective means available for warning travelers on the highway of the approach of trains.

The railroads respectfully submit the following suggestions for the consideration of this conference:

(a)—The adoption by this conference of the appliances now recognized by the American Railway Association and adopted as standard, and that every effort be made to have the necessary legislation enacted in the several states pursuant thereto.

(b)—That every effort be made to restrict the number of grade crossings annually opened and confine the opening of new crossings only to such cases where real public necessity exists.

(c)—That there be uniform laws in all states requiring that all highway accidents, at least all grade crossing accidents, involving motor cars or other vehicles on the highway be reported to suitable state officers, the accident investigated, cause definitely located, and such disciplinary action taken or penalties imposed as may be necessary.

(d)—It is our belief that the plan in effect in many states of imposing discipline in the way of nominal fines for serious violations of the rules of the road does not have the desired effect, and basing our view upon observations of the rules and experience of the United States steamboat service, we believe the plan followed where pilots or engineers have their licenses suspended for definite periods of time for violation of steamboat laws or for responsibility in accidents; or the plan followed in railroad service, where railroad employees are suspended from duty for infractions of the rules, represent the most satisfactory form of punishment. We understand that in some sections of the United States a most effective corrective plan has been found by impounding the vehicle responsible for accident for varying periods of time. A combination of these two methods may, in the final analysis, be what is required to accomplish the desired result.

(e)—We desire to submit for your consideration, although it may at first blush appear somewhat radical, another suggestion which we feel will appeal to your sense of fairness. The railroads each year are being taxed enormous amounts, a proportion of which is devoted to the construction and maintenance of a right of way for competitors operating for profit. We refer to the use of taxes collected from the railroads for the construction of new and the maintenance of old highways. We are not attempting to evade taxes of this nature, but believe that a proportion of the amounts so collected from us should be devoted to purposes from which the railroads will derive some benefit. We therefore suggest that that proportion of the taxes devoted to the construction and maintenance of highways which are used primarily by motor trucks and competitors of the railroads, be set aside in a special fund, to be used only to assist in the cost of the elimination of highway grade crossings. It is estimated that this will create a fund in the states amounting to approximately \$75,000,000 per annum. You will note this is seven times the total amount which has been spent by the 1923 railroads mentioned, plus state and local authorities, in the elimination of crossings each year during the last ten years.

(f)—We recommend the discontinuance of the use of the red light as a marker on the rear of automobiles and that some other color be substituted.

(g)—That careful attention and consideration be given at all times to improving the line of sight in both directions at highway-railroad grade crossings.

Other Addresses

Others addressing the meeting of the conference were George M. Graham of the National Automobile Chamber of Commerce; William McAndrews, superintendent of schools of Chicago; Lew R. Palmer of the National Safety Council and Homer D. Howard, locomotive engineer of the Illinois Central. Mr. Howard described the feelings of a locomotive engineman while driving his train with the thought that some reckless driver may at any moment dash in front of him. He requested his audience to imagine themselves engineers and firemen on a trip of the Panama Limited from Champaign, Ill., to Centralia, and described in detail the thrills accompanying such a trip when circumstances caused the train to lose one hour. The human appeal in Mr. Howard's address was so great that it was suggested that his speech be broadcast by radio; and a representative of Station KYW, Chicago, agreed to arrange for this from that station.

Central of Georgia Spectacular Traffic Increase

Revenue Ton-Miles in 1923 Exceed Those of 1922 by
28 Per Cent and Those of 1920 by 26 Per Cent

THE CENTRAL OF GEORGIA earned in the year ended December 31, 1923, the largest net after fixed charges for any year in its history. Its corporate net income available for dividends amounted to \$3,656,354. This compared with \$2,065,812 in 1922. The best year in the company's history previous to 1923 was 1916, in which year net after charges amounted to \$2,649,651. Central of Georgia dividends—all of which accrue to the Illinois Central—amounted in 1923 to 5 per cent on the company's \$5,000,000 common stock, or \$250,000, and to 6 per cent on the \$15,000,000 cumulative preferred stock, or \$900,000, making total dividend payments of \$1,150,000. The dividends were earned, therefore, more than three times over.

All of the outstanding stock of the Central of Georgia is owned by the Illinois Central. The Central of Georgia is,



The Central of Georgia

in effect, an extension of the Illinois Central into the Southeast, which means, in last analysis, that the territory which the Central of Georgia serves is favored with the like excellent railway service that shippers on the Illinois Central receive. The Illinois Central has had control of the Central of Georgia since 1909, when the \$5,000,000 common stock was purchased from E. H. Harriman for \$3,474,279. The \$15,000,000 cumulative preferred was issued in 1912. It was purchased by the Illinois Central at par and the proceeds used to pay off three issues of income bonds concerning the interest rates of which there had been considerable litigation.

Cumulative Preferred Retired

On December 1, 1923, the Central of Georgia received authority from the state of Georgia and shortly thereafter approval of the Interstate Commerce Commission, to exchange its preferred stock for common stock on a par basis. As a result the preferred has since been retired and common stock issued in its place. The common stock outstanding at present, therefore, totals \$20,000,000. The reason given for desiring to retire the preferred stock was that the purposes for the creation of the preferred issue had ceased to exist.

The point was also made that to have a single issue of stock would promote simplicity in accounting and that, generally speaking, common stock is more desirable than cumulative preferred. As of December 31, 1923, the Central of Georgia had outstanding \$20,000,000 common stock and \$49,156,110 long term debt. Of the latter, \$4,354,000 was in the form of equipment obligations, these having increased during the year in the amount of \$2,744,000, due to large acquisitions of new equipment. As of December 31, 1923, also the company had a corporate surplus of \$10,682,423, which amount was \$2,252,414 greater than at the end of 1922.

The principal reason that the Central of Georgia had net corporate income as large as it was in 1922 was the receipt of an extra dividend from the Ocean Steamship Company. This company operates ships from Savannah, Ga., to New York and Boston. All of its \$1,999,000 capital stock and in addition \$500,000 certificates of indebtedness are owned by the Central of Georgia. The Steamship Company normally pays 16 per cent dividends or approximately \$319,800. In 1920, the railroad corporate net was assisted by an extra dividend of 40 per cent. In 1923, there was an extra dividend of 100 per cent, making total dividends received by the Central of Georgia from the Ocean Steamship Company \$2,318,840. Total non-operating income in 1923 amounted to \$2,867,590, as compared with \$807,761 in 1922, an increase of \$2,059,829.

Largest Business in History

In 1923, the Central of Georgia carried the largest business in its history. The increase in traffic volume was so large as to be actually spectacular. The revenue ton-miles exceeded by 28 per cent the total for 1922, which in itself was one of the best years in Central of Georgia history. The best year previous to 1923 from the standpoint of traffic handled was 1920. Revenue tons carried in 1923 exceeded those of 1920 by 12 per cent; revenue ton-miles by no less than 26 per cent. The great increase in traffic volume was not, however, carried into net operating income. Expenses—particularly expenses for maintenance of equipment—increased out of proportion to the increase in revenues. Net railway operating income for 1923 was \$3,944,371. This compared with \$4,392,084 in 1922, so that in 1923, as compared with 1922, there was a decrease of 10.1 per cent. Notwithstanding this decrease, however, net operating income in 1923 was equivalent to about 116 per cent of the property's standard return for operations during federal control—or the average net operating income for the three years ended June 30, 1917. Furthermore, except for 1922, it was the best for any year since the beginning of federal control.

The Central of Georgia carries a diversified traffic. In 1923 products of agriculture constituted 12 per cent of the road's total revenue tonnage; products of animals, 1 per cent; products of mines, 32 per cent (bituminous coal, 24 per cent); products of forests, 23 per cent; manufactures, 24 per cent, and l.c.l., 8 per cent. The largest single items under manufactures was fertilizer and fertilizer materials, which together constituted 6.6 per cent of the total revenue tonnage. Central of Georgia revenue tons in 1923 amounted to 8,420,264, an increase of 26 per cent over 1922. It is interesting to see in what groups this unusually large increase took place. It is found to be in the mines, forests, and manufactures groups. There was an increase of 32½ per cent in products of mines; bituminous coal, the predominating por-

tion of this group, increased 29 per cent. The tonnage of products of forests increased no less than 50 per cent, whereas in 1922, products of forests gave the road 1,284,516 revenue tons of freight or 19.22 per cent of its total tonnage; in 1923 this group included 1,932,958 tons or 22.96 per cent of the total. The increase in tonnage of manufactures, 1923 over 1922, was 22½ per cent. A characteristic of railway operations generally in 1923, was the fact that the average haul on freight handled was generally less than in various preceding years. For the Class I roads as a whole, the average haul reported in the Interstate Commerce Commission figure of "miles per revenue ton per road" was 178.86 as compared with 186.45 for 1922. The Central of Georgia average did not move with the average for all roads; its average haul on revenue freight in 1923 was 193 miles, as compared with 189 in 1922, with 171 in 1920, and with lesser figures in years preceding.

Revenues and Expenses

Central of Georgia freight revenues in 1923 totaled \$18,040,943, an increase of 13.51 per cent over 1922. This relatively small increase as compared with the increase in revenue ton-miles of 28 per cent is explained by the decreased revenue received per ton per mile which in 1923 was but 1.11 cents as compared with 1.25 cents in 1922.

Total revenues in 1923, were \$26,198,846, an increase of \$2,912,110 over 1922, or 12.51 per cent. Total operating expenses were \$21,138,070, an increase of \$3,196,674. Thus, whereas there was an increase of 12.51 per cent in operating revenues, there was an increase of no less than 17.82 per cent in operating expenses. The result was a decrease in net revenue from railway operations amounting to \$284,565. The Central of Georgia reports a credit per diem balance. In 1923 this amounted to \$208,069 or \$200,560 less than in 1922. As previously noted, net operating income was 10.1 per cent less in 1923 than in 1922, the actual decrease being \$447,713.

The manner in which the marked increase in operating expenses occurred is interesting although unfortunately not adequately explained in the recently issued annual report. The total increase was \$3,196,674 or 17.82 per cent. There was an increase of \$431,125, or 14.45 per cent in maintenance of way; of \$1,372,890, or 15.56 per cent in transportation. There was also an increase of \$1,216,186—27.71 per cent—in maintenance of equipment. This increase is explained in the annual report as being "due to a more extensive maintenance program and increase in wage during the year." The marked increase in traffic must have been, of course, an important factor. The chief interest in the situation lies in comparison with other roads. Thus, the Class I railroads as a whole spent 17.1 per cent more money for maintenance of equipment in 1923 than in 1922, but as a result they effected a marked improvement in their equipment condition. This improvement was reflected in the Car Service Division figures of equipment condition by a decrease in the per cent of locomotives held for repairs requiring over 24 hours from 21.1 on January 1, 1923, to but 14.6 on January 1, 1924, and by a decrease in bad order cars during the year from 9.5 per cent on January 1, 1923, to 6.5 per cent on January 1, 1924.

The Central of Georgia had no such condition to remedy.

Its equipment was in such good condition that on January 1, 1923, it reported but 9.7 per cent of its locomotives held for repairs requiring over 24 hours and but 4.9 per cent of its cars in bad order, and this condition it has since maintained. The figures of car and locomotive condition as reported to and by the Car Service Division have certain recognized limitations. There can be little question, notwithstanding, of the good condition of Central of Georgia equipment throughout the entire year. The reason for this conclusion is that whatever limitations may lie in the figures, a poor condition could not possibly be reflected in such good figures nor with a poor equipment condition could the Central of Georgia have handled such an increased traffic as it was called upon to move. The conclusion seems to follow that at present Central of Georgia cars and locomotives must be in extremely good shape and that decreased expenses for maintenance of equipment may be expected for 1924. The maintenance of equipment expenses in 1923 totaled \$5,605,847 or 21.4 per cent of operating revenues. In 1922 they totaled \$4,389,661 or 18.85 per cent of operating revenues. Of the increase of \$1,216,186 as between the two years, \$600,736 was in the primary account of locomotive repairs, which item increased 39 per cent and \$431,694 in freight car repairs which increased 30 per cent.

Additions and Betterments

Additions and betterments on the Central of Georgia in 1923, totaled \$4,610,004, divided \$977,713 for roadway and structures and \$3,632,291 for equipment. The 1923 expenditures as a whole were considerably more than twice those of any preceding year. The 1923 expenditures for "road" however, were less than in 1921. The expenditures for equipment were, however, no less than 3½ times those of the best previous year—1919—during which year the standard equipment allocated by the Railroad Administration was taken into the accounts. Acquisitions in 1923 included 10 new Mountain and 10 new Mikado locomotives and 8 Mikados rebuilt from Consolidation locomotives which had been retired in 1922. At the end of the year the Central of Georgia owned 298 locomotives. This was 28 more than at the beginning of the year and there was an increase of 1,335,424 lb. of tractive effort. During 1923, also, the Central of Georgia acquired 6 steel passenger train cars, and the following freight train cars: 500 ventilated box; 300 hopper, 200 gondola; 100 stock; 100 flat and 20 caboose cars. The sum of \$42,982 was spent for application of superheaters, valve gears, piston valves and other improvements to locomotives and \$14,716 for reinforcement of draft gears and other additions and betterments to freight cars.

First Quarter of 1924

The Central of Georgia continues to handle a heavy volume of traffic. For the first quarter of 1924, total operating revenues exceeded those of the first quarter of 1923 and revenues in March, 1924, exceeded those of March, 1923. The figures show gross for the quarter amounting to \$6,839,428 as compared with \$6,796,167 in the first quarter of 1922. Net operating income, or net after equipment and joint facility rents for the quarter, was \$1,252,474 as compared with \$1,246,585 for the first three months of 1923.

CENTRAL OF GEORGIA RESULTS, 1913 TO 1923

Year	Mileage	Revenue tons carried	Revenue ton-miles	Ton-miles per mile of road	Average haul	Revenue per ton-mile, cents	Revenue train load	Revenue car load	Total operating revenues	Total operating expenses	Net operating revenue	Net after charges
1913.....	1,924	5,813,399	869,198,000	451,745	150	1.05	284	19.56	\$14,184,940	\$10,642,111	\$3,542,829	.....
1914.....	1,924	5,239,049	781,643,000	406,240	149	1.06	283	18.77	13,004,517	10,042,701	2,961,816	.....
1915.....	1,925	5,011,052	786,420,000	408,723	157	1.02	303	19.29	12,254,153	8,654,468	3,599,685	\$1,694,124
1916.....	1,922	5,600,353	907,371,000	472,132	162	0.99	344	19.74	13,725,144	9,281,045	4,444,098	2,649,651
1917.....	1,919	6,273,089	1,050,608,000	547,550	167	0.96	371	21.13	16,024,537	11,045,849	4,978,688	2,640,628
1918.....	1,918	6,893,225	1,143,775,000	596,247	166	1.13	389	23.56	20,692,888	16,046,496	4,646,392	1,205,287
1919.....	1,918	6,066,408	989,023,000	515,575	163	1.33	467	22.90	21,696,511	19,289,423	2,407,088	1,282,650
1920.....	1,914	7,517,302	1,283,298,000	666,849	171	1.21	487	24.74	25,082,288	25,733,367	—651,079	1,516,707
1921.....	1,914	5,933,886	1,112,683,000	581,452	188	1.31	469	23.35	22,057,499	20,020,843	2,036,656	—979,814
1922.....	1,919	6,684,481	1,264,422,000	658,876	189	1.25	478	22.50	23,286,737	17,941,396	5,345,341	2,065,812
1923.....	1,921	8,420,264	1,622,744,000	844,898	193	1.11	498	24.38	26,198,846	21,138,070	5,060,776	3,656,354

Hearings on Section 15-a Concluded

Committee May Propose Substitute — Distribution of Earnings Suggested

WASHINGTON, D. C.

HEARINGS before the Senate committee on interstate commerce on the question of repealing section 15-a of the interstate commerce act, which were begun on April 9, were brought to a close on May 5 after Alfred P. Thom, general counsel of the Association of Railway Executives, had occupied four morning sessions in trying to sandwich a rebuttal statement in with a running debate with Senators Smith, Gooding and Pittman. Chairman Smith was the only member of the committee present at the last session. Also Ben B. Cain, general counsel of the American Short Line Railroad Association, made a statement on May 2 in opposition to a repeal of section 15-a. When the hearings were started the committee had announced its intention of confining them to three days to each side and one for rebuttal by the railroads because they were asked to testify first, and in many ways the four or five senators who attended indicated a desire to speed up the hearing so they could report a bill, but they have apparently tried to make up for the comparative lack of interest shown in favor of a repeal by keeping up a continual argument with the witnesses who did not agree with them and the time before the expected adjournment of Congress is now very short.

It is expected that the committee will attempt to draft some kind of a substitute for 15-a but apparently the members have widely varying ideas of what the substitute should be. During the last few sessions their attack was centered largely on the recapture clause of the act, on the ground that it allows a road fortunate enough to earn over 6 per cent to keep half of the excess, because the railroads are not rushing in to pay to the government any large sums before the amount has been determined, and because it does not appear likely that the weak roads will be able to borrow much from the fund to be created. Various suggestions were made for ways to divide up the revenues of the railroads more evenly.

\$4,000,000,000 of New Money

With No Additional Return

Mr. Thom, in arguing against any change in section 15-a at this time, said that while he did not agree with all of its provisions and while it may not have worked out exactly as expected in some respects, it has not yet been sufficiently tested to demonstrate in what ways it should be changed and to act now would convince the public and possible investors in railroad securities that there is no stability in the policy of Congress toward the railroads. Confidence in a stable policy, he said, is most essential to the credit of the railroads. He pointed out that the complete theory of the transportation act contemplates consolidations and said that if a number of approximately equal systems can be worked out it would be possible to have a system of rate-making that would deal with the reasonableness of rates themselves rather than with earnings, except as the earnings of the railroads as a whole might indicate an opportunity for general reductions. But, he said, the railroads ought to be allowed to have all they can earn under reasonable rates because such a policy would inspire the initiative and energy that makes for success and low cost of transportation. In closing his statement Mr. Thom showed that while approximately \$4,000,000,000 of new money has been put into the railroads since 1916 it has not received a penny of additional return because the net operating income has always been less than it was in 1916.

In opening his statement Mr. Thom said that the cardinal principles of rate regulation are still in the law but that there

is a range of reasonableness of rates and that section 15-a has simply to do with the choice of rates within that zone of reasonableness, the commission being directed to select rates which as nearly as may be will produce a fair return, instead of those which will merely avoid confiscation. He pointed out that 15-a was not responsible for the percentage plan of raising rates which was used in 1920 but that that advance had followed the precedent set in 1917 and 1918 because of the pressure of circumstances. He outlined the efforts of the railroad executives since 1914 to have the principle of protection and encouragement incorporated in a law that had been framed on a repressive and corrective basis, and showed how transportation had several times proved inadequate because the lack of railroad credit was slowing up development. When Chairman Smith asked whether the spirit of restriction and correction was attributable to the law itself or to the attitude of the commission or the public Mr. Thom said that the resentment born of the long fight for regulation had reflected itself and is still reflecting itself to some extent in the attitude of the public and of public bodies. When the situation had become generally recognized and the question of what should be done about it was being discussed he had personally favored a statutory declaration that the railroads should have a fair return that would enable them to build up their properties in the public interest and he did not favor some features of section 15-a. However, the question of repealing them is very different from that involved when they were enacted, because 15-a contains a recognition of what was essential and its repeal would amount to a denial of the soundness of the fundamental principle, creating a doubt as to the policy of Congress which would make it difficult to raise capital and might result in a cessation of railroad development.

Readjustment of Divisions

Senator Pittman, who had shown great interest during Mr. Cain's testimony in the idea of redistributing railroad earnings through a readjustment of divisions, asked Mr. Thom if it was not the purpose of Congress to assure each railroad a fair return, and if that object should not be brought about through changes in divisions or by distribution of the recapture fund. Mr. Thom replied that Congress had not attempted to go that far but merely to approach that desideratum by providing for a fair return for the roads as a whole and allowing some incentive to efficiency by allowing a road to keep half of any excess. "If that is so," said Senator Pittman, "the law is even more vicious than it has been represented as being. If it is not the duty of the Interstate Commerce Commission to readjust earnings promptly, instead of letting the big roads make more than a fair return while others earn less, then the whole thing is all wrong."

Mr. Thom replied that if a policy of taking away from a successful road to divide with the less successful were followed the result would be that the successful road would not longer be able to attract new capital and soon there would be nothing to divide. Senator Pittman insisted that if the earnings were so divided that each road should earn 6 per cent there ought to be no difficulty in raising capital. Mr. Thom replied that that might be so if the 6 per cent were assured but that if the idea is merely to make rates intended to produce such a return they will not always do it. He also said that the effect of a change in divisions is not certain because the net that a railroad will receive depends on how the traf-

fic moves and on its operating efficiency, and that readjusting the divisions is not an effective way in which to make all roads fare alike.

Stability of Policy

Senator Smith asked Mr. Thom to discuss the recapture clause, saying that people think that any excess represents that much above what a reasonable rate should produce and that the ways of getting the money back seem very uncertain. He asked if that were not a weakness in the law and if there were not some way to use the money for the benefit of roads that need it and therefore indirectly for the benefit of the public "without imposing a burden on traffic." Mr. Thom said he recognized the difficulty but thought that more is to be gained by letting the public get the idea that there is a stable policy than by attempting to perfect details on the basis of insufficient facts. The act contemplates working out the problem of the weak roads, he said, by consolidation and that can be worked out if railroads are permitted to consolidate voluntarily with the right to condemn, and if they are allowed to take in weak roads on a commercial basis of valuation instead of an appraisal.

Mr. Thom showed the results of the improvement in service which followed the transportation program adopted by the railroads last April and referred to the improvement in their relations with the shippers which has resulted from the organization of the shippers' advisory boards, saying that the public and the railroads are now closer together than ever before. When senators hear from the shippers, he said, they are likely to think it propaganda but as a matter of fact there is a changed situation. "All this has been accomplished under the transportation act," he said. "With a helpful public policy it is up to the railroads to make good and they are doing it. Why disturb it at this time because of some theory that things can be made better. The railroads are functioning better than ever before. Why change a situation that is so satisfactory?" He said that in the faith of fair treatment by the government the railroads have been able to raise a considerable amount of new capital, increased efficiency of operation has made possible some considerable reductions in rates without much change in basic costs, and if allowed to go on the railroads can do better.

Referring to the situation of the farmers Mr. Thom said that the reduction in prices of farm products began before the 1920 increase in rates and that the value of farm products has since increased by 30 per cent as compared with 1921. If rates were reduced one-third the amount would not be sufficient to solve the farmer's problem of low prices and high costs of production, he said, showing that the entire freight revenue on wheat is only about \$120,000,000. If this were the cause of the distress, he said, it would be easy for the government to relieve the farmer by paying it for him, but among all the plans suggested for the relief of the farmer no one has proposed such a plan.

Replying to Senator Capper's statement that the time has come for the railroads to help the farmer because some of the larger roads have become prosperous Mr. Thom showed that the Union Pacific and Santa Fe handle less than 50 per cent of the traffic of Kansas, instead of 70 to 75 as Senator Capper had said, and that if their rates were reduced the result would be to ruin the other roads in Kansas most of which are earning less than a fair return. At this point, Mr. Thom pointed to the cartoon showing a farmer trying to use a wheel from a locomotive, all ready to pull a heavy train from an elevator, to replace a broken wheel on his farm wagon. The wheel would not fit the wagon, he said, but its loss would prevent the big train from moving.

As to the question of supervision of expenses Mr. Thom said he deplored that the commission had not selected some one from the division having that matter in charge to explain to the committee just what the situation is. He said there

is no lack of power in the commission and that Congress might by a small appropriation provide it with the means for keeping a more complete check of railroad expenditures in order to satisfy the public mind. However, if the commission finds evidence of extravagance, he said the remedy lies in its duty to eliminate the amount in arriving at a basis for fixing rates.

Representative of Short Line Carriers Heard

Ben B. Cain, general counsel for the short lines' association, asked Congress to consider the evil situation which existed before the law was passed, when railroad facilities had become inadequate and it was necessary either for the government to take them over or find some way by which they could be supplied with the credit necessary for development. A large part of the problem, he said, was that of the weak roads and the short lines were interested in the railroads as a whole having adequate earnings and then in some plan of equitable distribution. He mentioned as the four "cornerstones" of the structure created by the act, first, provision for sufficient revenue to sustain the entire transportation system; second, the power in the commission to establish through routes and joint rates; third, power in the commission to distribute the revenues so that the weak lines could get their share; fourth, power in the commission to decide what roads ought to be abandoned and to prevent the construction of new unnecessary mileage, and, he said, the "capstone" of the entire structure was the provision for consolidation. The recapture clause, he said, is only a temporary emergency measure to operate until the rates and earnings can be equitably distributed through readjustment of divisions and by consolidation. The New England lines, Mr. Cain said, whose bankruptcy would have reacted against the interests of the whole country, have not only been preserved but are coming back to a healthy condition "largely because of the wholesome provisions of the new law."

When Chairman Smith asked what he would think of a law providing that the rates shall be so fixed that the revenues may be prorated equitably among the weaker roads Mr. Cain said that provision for that is made in the present law. Senator Gooding insisted, as he has been doing throughout the hearing, that the commission has no information regarding divisions, because he had asked for them in vain. Mr. Cain replied that he was mistaken, although the commission had not done as much about it as it should have. He said that if the divisions were handled properly there would be no need for recapture.

Senator Pittman showed much interest in the suggestion of redistribution through divisions and asked why more of the short lines had not applied for increases. Mr. Cain said that many of them cannot afford the expense of making a case and that also in some instances if their divisions were increased the traffic would be routed another way. Senator Pittman said that if they were afraid of the trunk lines and for that reason were unable to get justice from the commission they might lay their case before the committee with a view to changes in the law that would compel the commission to act. Mr. Cain replied that they had now been assured that the commission was going to do something and that the present law will properly distribute the earnings as fast as the commission can get to it. The commission had started with some of the larger weak lines and had not yet had time to give much consideration to the shorter lines. If left alone, he said, the law will work out the situation and when consolidations are effected "Uncle Sam will give the big road so much and tell it to feed its family; the short lines that ought to be grouped with it." Mr. Cain then described the service performed by a short line in opening up a new territory and originating traffic that is hauled to market over many lines, and also the effect on a community thus built up if the road cannot earn enough revenue to continue operation.

Hearing on Automatic Train Control Order

Railroads Ask Annulment of Second Order—Stone Says Enginemen Oppose It.

WASHINGTON, D. C.

THE 42 RAILROADS required by the Interstate Commerce Commission's order of January 14 to make installations of automatic train control (excluding 3 roads since exempted) were given an opportunity at a hearing before the commission on May 7 to show cause why the order should be annulled or modified. A general statement outlining the position of the railroads and proposing three regional tests on 100 miles of line in each region was made by W. J. Harahan, president of the Chesapeake & Ohio, as chairman of a committee named by the roads, and the contention of the roads was reinforced by Warren S. Stone, grand chief engineer of the Brotherhood of Locomotive Engineers, who testified that the engineers are strongly opposed to having their responsibility for the handling of a train divided with an automatic device.

At the outset Chairman Hall announced that the entire docket developed under the commission's train control investigation would be treated as a part of the record and copies of a questionnaire to be filled out by the railroads calling for additional information were passed around. When Chairman Hall asked that copies be furnished to all parties in the case, F. Hall, general counsel of the Nashville, Chattanooga & St. Louis, who appeared as chairman of a committee of counsel, said he understood that the 42 roads were the only parties, and that this was the inception of their day in court, as only 49 roads were named in the first order on which the previous hearing was held. The chairman indicated some surprise at the statement that only 49 roads were named in the first order but at the opening of the afternoon session made a corrected statement in which he said that the 42 additional roads named in the order on January 14, excluding three that have been exempted, are the only respondents to this proceeding. He asked if there were any objection to the previous record being considered a part of the present record. Mr. Hall entered a formal objection on behalf of the 42 roads, saying they were not willing to be involved in a proceeding in which they had no right to appear and in which some inaccurate testimony was introduced without opportunity for cross-examination, but when the chairman asked if they might not be willing to co-operate to save labor he agreed that counsel should consider the matter and give their answer later.

Mr. Harahan's statement was as follows:

Statement of W. J. Harahan for the Railroads

The railroads feel that if the orders of the commission, issued June 13, 1922, and January 14, 1924, are insisted upon it will cause them to spend money which will not bring about as much safety in operation as will be the case if they are allowed to spend this money in other directions, and they also feel that much of the money which would be so spent would be wasted, because of the crude state of the art of train control. In the case of a great many individual roads they are utterly unable to determine, in view of their financial needs for safety and other imperative purposes, how they can obtain the money necessary to carry out these orders.

Many railroad technical and executive officers feel quite strongly that automatic train control is still in the experimental stage. There are none who feel that it has passed what may be known as the development stage, and this does not mean the development of the smaller niceties or details of operation, but means much development of an important nature. Testimony will be given at this hearing which will indicate exactly the state of the art as it exists today.

At the hearing which preceded the order of June 13, 1922, much testimony was given showing the experimental nature of train control at that time, and in the two years which have passed since the issuance of the first order there has been an opportunity to obtain much information as to some of the devices which have

been in use since that time, and interesting testimony will be given upon that phase of the situation, showing just what has developed to substantiate the earlier testimony. It is the strong opinion of railroad executives that the other so-called safety appliances, like automatic block signals, air brakes, automatic couplers, etc., were much further advanced towards a practical solution when their large expansion began than is the case with train control today.

It may be urged by some that the railroads are seeking to place money before safety in their attitude on this matter. This is not true, but there is a practical feature in the provision of money for the various needs in the operation and expansion of the railroads that cannot be brushed aside. The situation, in so far as providing money for the railroads is concerned, is of course well known to the commission. The public, through Congress, required the Interstate Commerce Commission to set a valuation upon the property of the railroads, and then the commission was authorized and directed to determine what should be a reasonable rate of return upon the valuation thus determined. The percentage determined upon was 5¾ per cent. It is further the fact that if the individual road earns more than 6 per cent upon its valuation so determined it must return half of such excess to the government. The people themselves have therefore determined, by setting up this method, just how much money the railroads can have for net railway operating income. The money so obtained must be used by the railroads to pay their fixed charges, to defray certain capital charges, which it is deemed good practice to pay for out of income and a reasonable dividend if earned. Of course the more money a railroad has left after all these requirements are met, the more superior its credit standing is and consequently the greater its ability to obtain capital for the improvements necessary to obtain safe and economical operation and to provide those facilities necessary for the country's expansion. All of this is contingent upon the honest, economical and efficient operation of the railroads, as required by the law, which requirement we contend is being fully complied with. The railroad executive is thus confronted with the necessity of applying the money obtained from operation, together with that obtained from the judicious sale of securities, in that way which will enable him to obtain the most productive results. There are many improvements which the commission would no doubt like to have made, and which the railroads would like to do, but the money is not there to do it, so business discrimination in selecting the purposes for which the money available is to be spent has to be used, in order to properly expend it. For instance, the railroads would like to eliminate as many grade crossings as they possibly can. The number of persons killed at grade crossings per annum is many, many times the number of passengers and employees whose lives will be saved by the use of train control. The railroads cannot eliminate all of the grade crossings at once because they cannot obtain the money to do so. They can only take the most hazardous ones and eliminate them a few at a time with the money that is available.

In this question of safety it is the desire of the railroad executives to spend the money along the lines which will produce the greatest safety and consequently they do not look with favor upon putting vast sums upon a device which is yet in its infancy so far as the development of the art in connection with it is concerned. They would much prefer to invest an equivalent amount of money in automatic block signals, rather than in this undeveloped device.

What is the purpose of train control when analyzed and stated in the most simple words possible to describe it? It is that if the engineer, through some lapse, does not apply the brakes when confronted with a signal requiring him to do so that this device will apply them automatically. In other words, in order to produce the situation which brings this device into action, the engineer could either be asleep, he could be reading, he could have fallen dead or he could have other things happen to him. The engineers in our service today are men of high character and have an intense appreciation of their grave responsibilities. The faults above referred to are less frequent than they were years ago, because I am sure the men are more alive to their responsibility and also because traffic is heavier almost everywhere, and when traffic becomes heavier it begets a spirit of alertness on the part of the men as compared with lighter traffic. In addition to this fact the railroads have generally in the past few years been conducting what are known as efficiency tests. These tests are designed to be entirely fair to the engineer and, as long as they are conducted along fair lines, and along lines which will not

tempt men to do something wrong I am sure that the men as a whole approve of them, and that they are very effective. The results of these tests show very markedly the good record of the engineers in obeying signals. In view of the facts as above described this device can only come into play through some lapse of the engineer, in which he at the same time takes his own life in his hands. Does this not show the unquestionable fact that automatic train control is designed to protect against most unusual occurrences. Automatic train control will not prevent all collisions. On the other hand automatic block signals protect against occurrences which are likely to take place any day, anywhere. They protect against broken rails, open switches, cars getting out on the main line, slides on the track and of course they protect one train against another when a train passes the point at which it is supposed to meet another train and against a train which has stopped ahead of it. Is it not reasonable that the railroad executives should feel that they should provide as much of this character of protection as is possible, before they depart into realms of conjecture which the automatic train control has presented up to this time?

Perhaps it may be said that we should have both, but then we come back to that same proposition that we cannot have both, because the people will not allow us to charge sufficient rates to provide this, together with the improvements necessary for the country's expansion.

Much has been said at one time or another, indicating that it is the view of some that railroad executives have not taken the deep interest in this train control matter which they should. I feel that when the circumstances and conditions surrounding the matter are analyzed that they will be fully absolved from such a suspicion. The real truth is that very few railroad presidents, I may say none, have felt satisfied that any practical thing had been offered and this conclusion was arrived at after they had followed the situation with a great deal of care and the desire to do whatever was advisable, but in consideration of the arguments that I have above quoted, that is the question of applying the maximum amount of safety for the money which they had to spend, and the necessity for taking care of the growing requirements of the country's expanding business, they have felt that the things which train control is designed to take care of were of such infrequent occurrence that other things, of far greater moment from the safety standpoint should be taken care of first. I believe that any business man and any member of the Interstate Commerce Commission, finding themselves so situated, would have taken the same attitude toward this proposition. I do not like to be appearing to accentuate the money side of this proposition to too great an extent but it is really necessary in order to fully present the situation. I am sure that train control will cost a far larger amount of money than was at first anticipated by the commission. Our engineers advise us that it will cost somewhere near the following to put in a train control system that may or may not carry out the intention for which it is designed.

Where automatics are already in use.....	\$3,000 per mile
Where there are no automatics, to install automatics and train control	6,700 " "
Installation of train control alone, without automatics....	5,000 " "

The estimated cost per mile seems to vary but little in any of the types of train control as compared with each other, viz:

- The ramp system,
- The intermittent induction system,
- The continuous induction system.

I have heard some well-informed men argue that we are running up the cost of automatic train control by attempting entirely too elaborate a proposition, and it is suggested that what we should do is simply to place a device at a point where a signal is located, or find some means whereby the air will be automatically applied if the engineer does not do so at the point where he should. We cannot carry out the requirements of the Interstate Commerce Commission, as I understand it, with such an installation as this.

I believe that it is not known what the effect will be upon the control of trains on heavy grades. I am afraid that upon heavy grades there will be introduced far greater dangers than are now encountered without train control, particularly on railroads handling very heavy trains, because the question of the exhaustion of air will present a real danger. Every engineer has a different method of handling the air on his train. Every train requires a different method of handling. You cannot substitute a machine which will act in the same way as will the human brain and human skill.

There is another very serious feature in connection with this character of device and it is one that will appeal to anyone who has had charge of men for many years, and that is the question of taking from the trainmen responsibility of controlling their trains and thus putting them in the position of taking chances, which they would not take if they knew that the whole responsibility was upon them. In considering the making of rules and putting in safety devices of various kinds this great question is always before the minds of those so engaged. In other words, if the trainmen feel that the brakes are going to be applied auto-

matically it is likely that they will take chances, and if they will take chances of this kind they may take chances in other directions.

With reference to the question of interchangeability. This is another of the untried fields which we are confronted with in considering what the results of automatic train control may be. It is desirable to have as many devices of automatic train control as it is practicable to work out, in order that we may obtain competition, and at the same time on account of railroads running over each other's tracks, and also because of the fact that we have to change locomotives from one part of our line to another very frequently, it is very necessary that a device be adopted which would allow this to be done. The Transportation Act, as is well known, encourages the consolidation of railroads into a smaller number of systems. It also quite clearly seeks to encourage the joint use of facilities by railroads, so that the feature of interchangeability, in the light of these requirements of the Transportation Act, becomes an important one.

Test on 100 Miles in Each of Three Regions Suggested

The railroads desire to co-operate, however, in working out a proper system of train control, notwithstanding the conditions above recited, but they feel most emphatically that it is not necessary to equip 16,000 miles of railroad, as is provided for in the two orders of the commission, to make the proper development of this art. To equip 16,000 miles of railroad with train control and automatic blocks will require the expenditure of perhaps \$102,000,000, at least calculation. We submit, just as strongly as we know how, that this is too much of an expenditure for the purpose of providing against the occasional accidents that may occur and which are getting less and less every day as is shown by the Interstate Commerce Commission's own reports because we feel that for the same money a much greater amount of safety can be had as shown in detail above, and which would also add to the capacity of the railroads. Automatic train control, in its present stage decreases the capacity of railroads by the introduction of unnecessary stoppages, running slowly, etc., as compared with present practices. It is earnestly suggested that train control can be worked up to a sufficient stage of development if, instead of the colossal trial which has been ordered by the commission there be selected a certain number of miles in each region, that is: Eastern Region, Southern Region, Western Region, for the purpose of trying these signals out under all conditions of density of traffic, heavy grades, weather and all the other factors necessary to be overcome in the solution of this subject. It is thought that 100 miles in each region, located on various railroads and in places where the most severe tests could be had, would be adequate.

If the above suggestion is carried out this will mean 300 miles of automatic train control, costing the railroads over \$2,000,000. It is submitted that this amount of mileage of train control should be enough to insure the working out of the problem to a successful conclusion. It would be the thought that if the commission would countenance experiments of the character above suggested that those railroads who have not yet made their contracts for train control would hold any further action in abeyance and those who had made contracts would not proceed unless required to do so by such contracts or they so desired.

There should be a minimum traffic, below which railroads should not be required to equip their lines with these devices, and experiments should be had so as to determine whether a simple device can be obtained with which such railroads could equip themselves. On many lines of light traffic it would cost them a large proportion of the original cost of their lines if they had to equip them with the devices known today.

There are certain changes desirable in the specifications which the signal engineers and operating officers consider quite necessary, and which will be explained by them in their testimony.

The C. & O. railroad, of which I am the executive head, has conducted very interesting tests on its lines with reference to the question of automatic train control. The C. & O. has probably spent more money proportionately than any railroad in the country. I feel, therefore that our testimony should be given the added weight which actual experience entitles it to. The C. & O. has been experimenting with automatic train control since 1916—eight years. It has what is known as the ramp device. It now has 61 miles of this device in operation, 21 miles east of Charlottesville, Va., and 40 miles west of that point. The device has been designed, redesigned and then designed again, but we do not by any means regard it as being perfect today. There are many undesirable features in this system. It has been the strong desire of the C. & O., to develop a train control system and it has spent for purposes of development, including the cost of the apparatus, over \$8,000 per mile; yet in spite of this record of eight years endeavor this company must yet admit it does not possess an automatic train control system which satisfies it. It does not meet the I. C. C. requirements. Our experience is such that we feel that we could not operate this train control with cab signals, without way-side signals, as our experience does not indicate that such a system would be reliable.

Another situation now presents itself, which gives the C. & O.

much concern; that is the commission, in its first order, required the installation of train control on 49 railroads. So far as we can ascertain every one of the 49 railroads which has decided upon the system which it desires to experiment with has determined to make its experiments with the induction type, either intermittent or continuous, the only railroads going ahead with the ramp type being the three roads which had been experimenting with it before the commission's order. The induction type is not interchangeable with the ramp type.

The C. & O. desires to run engines on its passenger trains from Clifton Forge, Va. to Washington, D. C. Under the situation as it now exists this would mean that if we continued to equip our line with the ramp device we would start at Clifton Forge with the a. c. ramp device. This would be for a distance of 96 miles on the C. & O., Clifton Forge division. At Charlottesville we would encounter the Richmond division d. c. installation, which is not interchangeable with our own a. c. installation west of Charlottesville. This would mean that we would have to change our d. c. system east of Charlottesville to a. c. or vice versa. From Orange, Va., we use the Southern's tracks to Alexandria. The Southern has been discussing the installation of an intermittent induction system, which would not be interchangeable with our ramp type. At Alexandria we would encounter the tracks of the R. F. & P., which we understand is figuring on the Union Switch & Signal Company's continuous induction type. We would then use the tracks of the Pennsylvania for a short distance, who have one installation of the Union Switch & Signal Company on their Lewistown line, which they are experimenting with and would perhaps use on this line. We would then encounter the Washington Terminal Company's tracks, who I understand have not yet adopted any device, as they are not included in the order. This is a very striking exemplification of the necessity for interchangeability. You can also see the predicament in which the C. & O. is placed in going ahead with its future train control plans. These instances are not related for the purpose of blocking and obstructing train control, but are merely designed to show the real facts with reference to the situation. The question, so far as the C. & O. is concerned, then presents itself as to whether or not the induction system is so far advanced as to warrant our going into it. We do not believe it is, which vividly shows the uncertain feature of the whole proposition.

For the year ended March, 1924, the average number of operations to each failure was about 2,654, whereas the average number of operations per failure of automatic block signals in that same territory was 16,891. The signal engineers advise that there are many roads who have obtained at least twice as many operations per failure for the automatic block signals as above shown, but even 2,654 affords a very important relation to 16,891, that is it shows over six times as many operations per failure with the automatic block as it does with the automatic train control. The false clear indications show about four times as many with the train control as with the automatic block.

It cannot but be patent to everyone that a device requiring contact, with very heavy pressure, between a moving device on the engine and a stationary device on the track, must result in the setting up of tremendous stresses. During the period which I have above alluded to there were seven cases of striking obstructions and ten cases of shoe broken off. Any one of these might have caused an accident of a serious nature. Detailed testimony as to the operation of train control systems in relation to comparison with other safety devices will be given at this hearing.

Commissioner Potter asked what assurance the commission would have that there would be any change in the policy of the railroads if it should decide that more lives could be saved by a given expenditure for elimination of grade crossings or installation of block signals rather than for train control. Mr. Harahan said that the roads would do all they can with the money available and when Commissioner Esch called attention to the comparatively small addition to block signal mileage in recent years he said that that was due to the financial conditions existing since the war. Commissioner Campbell suggested that the discussion be confined to train control saying that "the law does not give us a right to trade off train control for grade crossing elimination."

Mr. Harahan was followed by Samuel Rea, president of the Pennsylvania, who said that the railroads ought to be allowed to go ahead and develop their installations under the first order before being required to make additional installations. The first roads, he said, face the expiration of the first order on January 1 and penalties if they have not complied and an extension should be allowed because the roads are practically still in the experimental stage under the first order. Most of the railway executives, Mr. Rea said, do not

believe very thoroughly in train control or its results and he would much rather see the commission order block signals. Perhaps the time has gone by, Mr. Rea said in reply to a question by Commissioner Esch, for regional test installations, such as suggested by Mr. Harahan, for the roads that have already begun installations because so much work has been done that it might be better to go ahead.

Engineers Opposed to Train Control

Mr. Stone made it plain that his organization was not "the father of the law" which authorized the commission to order train control. "It didn't want it then and it doesn't want it now," he said. "The labor organizations had nothing to do with it and don't want it. The engineers are more interested than any other class of men and my opinion is based on 25 years of experience in the cab. No automatic device manufactured as yet has been able to think and when you take control from the man and give it to an automatic device you find difficulties." Mr. Stone then went on to explain that braking condition vary with conditions and different trains and that the engineer must adapt the brake pressure and the time of applying the brakes to the conditions as he finds them. He declared that train control is still in the experimental stage and has not yet arrived at the development which the air brake and automatic coupler had reached when they were made universal. He said that only 3 per cent of railroad fatalities are due to collisions and that twice as many could be saved by eliminating accidents at grade crossings; expressing the opinion that some of the worst crossings on each railroad should be eliminated before the railroads are required to spend the money for an experimental automatic device. "The greatest tragedy of the railroads has not yet been written," he declared. "It is going to be written some foggy night when the engineer can't see the signals and depends on the automatic train control, which will stop him suddenly when his train is spread out and jackknife a lot of freight cars over on the high-speed passenger track. Also on every railroad there are chance-takers and with a device to share their responsibility they will take more chances. If the engineer is going to be held responsible he ought to be allowed to do the braking himself."

When Commissioner McChord asked how the 90,000 engineers had been able to express themselves on the subject Mr. Stone said he had talked with them whenever he had a chance, particularly with the general chairmen and also that he was "getting particular hallelujah for letting this become a law." When he added that it would be "interesting reading to find out who was behind it" R. F. Kernan, of the Regan Safety Devices Company, shouted: "Let him tell." When Chairman Hall asked who had interrupted and Mr. Kernan said something about being "interested as a citizen" the chairman said that he might be a citizen but that while at a hearing he was expected to observe order. Mr. Stone said that if Mr. Kernan would make a little inquiry he would have no trouble in finding out. Commissioner Esch remarked that Congress had considered the subject for 14 years and that bills for the purpose were introduced at almost every session.

Dr. Wooding asked Mr. Stone if he had ever had any experience with automatic train control and when he replied that he had not said that with proper operation the device does not take effect until after the engineer has failed to recognize a signal. Mr. Stone said that the chances of an engineer failing because of sickness, paralysis or death are about one in ten million whereas a mechanical device would fail about one in two thousand times. Commissioner Potter asked about the recent accident to the Twentieth Century Limited. Mr. Stone said he was there and that it was caused in the first place by a grade crossing accident, which stopped the first section of the train, and then by an error of judgment on the part of a man on a following section who failed to

send back a flag. He said that if limited trains are to be run in sections only two minutes apart something is likely to happen once in a while but that it is "only a side-show" to what will happen with train control.

John F. Welch, mechanical editor of the magazine published by the locomotive engineers' brotherhood, urged the commission to discontinue its order on the ground that automatic train control is still in the experimental stage, that it would make for careless operation and that it is impracticable to expect a device to apply the brakes properly under varying conditions. There was considerable laughter from the audience when he said he understood that if the engineer failed to apply the brakes at the right time the device would make an emergency application and cause the buckling of the train.

A. C. Needles, president of the Norfolk & Western, said that his company is working on the installation under the first order and that it would be desirable to withhold the requirement of a second installation until the first has been tried out and the question of interchangeability has been studied, particularly because of the uncertainty of meeting the approval of the commission with the first installation.

M. J. Caples, vice-president of the Seaboard Air Line, read a statement for President Warfield objecting to the use of funds for this purpose ahead of other pressing requirements on the ground that there is no substantial necessity for it even if train control had been mechanically perfected. Grade crossing problems are much more important, he said, and in comparison the protection supposed to be afforded by train control would be negligible. He said that the road should not be required to spend \$1,250,000 on a single district for a device in the "promotion" stage which is less necessary than other things and suggested that some government agency such as the Bureau of Standards conducts tests.

A. H. Rudd, chief signal engineer of the Pennsylvania, described the Pennsylvania's experiments with automatic train control and particularly the recent installation on its Lewistown line of the Union Switch & Signal Company's device, which he said had now passed out of the experimental stage into the "early development" stage. He expressed the opinion that "this is the best device there is and the only one that is correct in principle" but said that it may take four or five years to work out all the details of actual operation.

W. B. Scott, president of the Southern Pacific lines in Texas and Louisiana, said two installations on the system would be completed in September and November but that the second order had required five additional installations and he had petitioned for relief as to the Galveston, Harrisburg & San Antonio and thought that the installations under the first order should be completed and tried out and approved by the commission before any additional installations are required. He also thought that train control should not be required on a line before it has been equipped with automatic signals. In reply to questions Mr. Scott said that he favored a permissive rule so that an engineman if alert may forestall the device and he thought that the commission would ultimately find that it is necessary to recognize the human element.

The hearing was postponed until May 9 and 10 to enable the commission to hear arguments on the Pullman surcharge on May 8.

Train Control Companies Organize

A number of representatives of automatic train control or speed control companies held a meeting at the Washington Hotel on May 5, at the call of E. H. Abadie, vice-president and engineering director of the Standard Train Control Company, and formed a preliminary organization under the name of the Associated Train Control Corporations of America, to foster the interests of train control and afford a body through which the companies may act in their common interest. An executive committee was appointed, with Mr.

Abadie as chairman, composed of the chairmen of a number of other committees, and authorized to employ counsel and represent the members at the hearing before the commission.

Freight Car Loading

WASHINGTON, D. C.

FREIGHT CAR LOADING picked up slightly during the week ended April 26, showing a total of 878,892, as compared with 876,923 the week before. The increase was due to increased ore movement which was almost offset, however, by the reduction in coal. As compared with the corresponding week of last year there was a decrease of 83,686 cars although as compared with 1922 there was an increase of 127,781 cars. The cumulative loading for the year to date is now only about 5,000 cars above that for last year. The loading of grain and grain products, livestock, ore and merchandise showed increases as compared with last year, as did the Northwestern and Southwestern districts. The summary as compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING

	Week Ended April 26, 1924		
Districts—	1924	1923	1922
Eastern	208,544	246,163	175,634
Allegheny	179,156	216,031	145,012
Pocahontas	37,330	39,071	39,086
Southern	132,189	139,492	124,315
Northwestern	124,804	122,260	110,573
Central Western	134,348	141,472	108,429
Southwestern	62,521	58,089	48,062
Total Western districts	321,673	321,821	267,064
Commodities—			
Grain and grain products	38,029	36,894	36,198
Livestock	32,607	31,563	30,198
Coal	117,572	179,413	75,389
Coke	10,239	15,576	8,020
Forest products	76,870	77,446	58,870
Ore	24,417	24,159	13,890
Merchandise, L. C. L.	247,952	241,538	242,165
Miscellaneous	328,206	355,987	286,381
Total	872,892	962,578	751,111
April 19	876,923	958,042	706,137
April 12	881,299	947,271	700,155
April 5	862,096	896,375	706,013
March 29	907,548	936,274	821,808
Cumulative Total Since January 1.....	15,086,484	15,081,006	12,764,553

Car Loading in Canada

Revenue car loadings at stations in Canada in the week ended April 26 amounted to 53,403 cars as against 50,544 in the previous week. Grain loading in the eastern division increased 589 cars, live stock 193 cars and merchandise 1,660 cars. Live stock also increased in the western division. Coal showed little improvement but other forest products and miscellaneous showed substantial increases. Compared with the corresponding week in 1923 the total increase was 1,208 cars, or 2.3 per cent. Car loadings, by commodities, for the last three weeks were as follows:

Commodity	For the Week Ended		
	April 12 Cars	1924 April 19 Cars	April 26 Cars
Grain and grain products	5,446	7,023	7,325
Live stock	2,326	1,961	2,316
Coal	5,632	5,288	5,472
Coke	176	110	243
Lumber	4,344	3,792	3,481
Pulpwood	3,373	2,152	2,125
Pulp and paper	1,933	1,885	1,819
Other forest products	2,700	2,678	2,795
Ore	1,311	1,200	1,130
Merchandise L.C.L.	15,099	13,888	15,531
Miscellaneous	10,751	10,567	11,166
Total cars loaded	53,091	50,544	53,403
Total cars rec'd from connections	34,986	34,173	32,280
Total cars loaded for corresponding week, 1923	52,745	52,950	52,195
Cumulative loading to date—1924			890,395
1923			814,808

The car surplus further increased during the week ended April 22 to 321,832, including 189,600 surplus coal cars and 98,886 box cars. The Canadian surplus was 16,175 cars, including 12,350 box cars and 500 coal cars.

Air Brake Association Meets at Montreal

Passenger Train Handling and Interesting Employees in Instruction Among Subjects Discussed

THE ATTENDANCE at this thirty-first annual convention numbered close to 300 and included representatives from railroads in practically every section of the United States and Canada. The sessions were held at the Mount Royal Hotel, May 6, 7 and 8.

S. J. Hungerford Addresses the Association

The opening session of the convention was called to order by the president, George H. Wood, General Air Brake Instructor, Atchison, Topeka & Santa Fe. Mayor Duguet of Montreal made a brief address in which he welcomed the association to the city, pointed out its many advantages as a place to hold conventions and outlined a number of the various historical points of interest. He was followed by S. J. Hungerford, vice-president of the Canadian National, who gave an interesting account of the development of the railways of Canada and the various reasons why the government was required to take over a part of the railways. A large part of Canada is undeveloped and sparsely settled. However, for the welfare of the country as a whole, as well as for the benefit of those who live in the outlying districts, it is necessary to maintain a large number of lines that must be operated at a loss. It was out of the question to expect private owners to operate under such conditions, so rather than have the lines abandoned, it was decided to take them over and operate them under the present system. Mr. Hungerford brought out the fact that this was the most extensive undertaking in the operation of a public utility by any government and that the management of the Canadian National felt that its success or failure was being watched by all the world.

Mr. Hungerford paid a tribute to the work of the Air Brake Association and told of some of the improvement that had been made in the air brake since it was first placed in operation. Mr. Hungerford attributed a large part of the development of air brake maintenance to the efforts of the association. He mentioned the fact that in the early days when serving as a machinists' apprentice, his initiation into the mysteries of the air brake also included what was practically an oath to secrecy. That times had changed was well evidenced by the eager and open discussion at the annual conventions of the air brake men.

President Wood's Address

President Wood in a brief address extended a welcome to the old and new members and outlined the program and work of the convention. He brought out the fact that the advent of train control opened another field of endeavor for the air brake man and should be added to the program of the association. Mr. Wood also recommended that provisions for life membership for those who have been members of the Air Brake Association for 25 years or more should be made.

Following the opening exercises, the convention took up the regular program. Some of the reports, papers and discussions follow.

The following is an abstract of a report by the Committee on Brake Pipe Leakage. The report was read by W. W. White (Michigan Central).

Brake Pipe Leakage

During the year the committee which investigated the subject of Air Consumption of Locomotive Auxiliary Devices, on which it rendered its final report at the 1921 convention, was assigned the subject of brake pipe leakage. The assignment was made too late to permit an investigation this year, but the committee reported that it has formulated a program for the ensuing year for the purpose of developing data to support definite conclusions and recommendations on the following questions:

(1) What is the average leakage rate for trains in current service?

(2) What is the ratio between the amount of compressed air used for braking and the amount of air wasted in maintaining unnecessary leaks?

(3) What degree of leakage can be tolerated without serious interference with train operation?

(4) What is the unit cost of brake system leakage?

(5) What are the most efficient methods of inspecting and testing and repairing brake system leaks?

(6) What degree of maintenance expense is justified in the light of existing conditions?

The members of the Committee are C. H. Weaver, New York Central, chairman; C. B. Miles, Cleveland, Cincinnati, Chicago & St. Louis; W. W. White, Michigan Central, and R. E. Miller, representing the Westinghouse Air Brake Company.

Discussion

The discussion was opened by a member asking the question, "Where does the greatest percentage of pipe leakage take place?" In the attempt to settle this question various points on the train lines were mentioned, of which the hose and coupling received the most frequent comment. President Wood expressed the opinion that the committee should investigate the possibility of increasing compressor capacity sufficiently to offset leakage from 5 lb. to 8 lb. per min. Some of the members maintained, however, that increased compressor capacity meant increased carelessness on the part of many inspectors and no advantage would be obtained. It was generally agreed that any leakage amounting to 8 lb. or over should be reduced before the train left its initial terminal.

R. M. Long (P. & L. E.) said that the place to stop leaks was on the rip track. There was no economy in waiting for a train to be made up before testing, for if considerable leakage was discovered it meant a delay. The utilization of the Westinghouse single car testing device was recommended as an effective means for reducing leakage in air brake piping.

Various means for detecting brake pipe leakage were discussed, such as using the 95-car rack and making a 10-lb. reduction from a 70-lb. pressure. The advantages to be obtained by testing the train line with the train stretched and the possibility of increased leakage due to drawbar action while on the road were mentioned.

Attention was also called to the fact that the bad practice of pulling hose couplings was quite common and that many car men persisted in the practice of turning gaskets. A strain of from 1,200 to 1,400 lb. is exerted every time a hose is pulled apart at the coupling.

It was recommended that the work of this committee should

be continued and that its report should also take into consideration the maintenance of hose, as it was an important factor in leakage.

Report on Passenger Train Handling

The question of passenger trains being on time and smoothly handled is receiving much consideration because of competition. The public has been educated to expect high speed, safety and luxuries in the way of service that were not formerly demanded. As a result, they are critical if trains are delayed or are not handled smoothly. The influence these dissatisfied passengers have on others contemplating a trip cannot be discounted.

The fundamental cause of shocks to trains is a sudden change of slack, either in or out, and is produced by a rapid change of velocity between the various units comprising the train. Shocks are caused by starting quickly, taking slack harshly or restarting quickly after taking slack. The action of the brakes in changing the slack will be the most severe at low speeds. Therefore, make any brake application suit the speed, being careful to avoid heavy brake applications at low speed.

Co-ordinating the Throttle and Brake Valve

It is desirable to avoid a change in the position of the throttle and the use of the air brakes at the same time. This is important if the action of either will change the train slack in the same direction. Under such condition the effect would be intensified if both were used at the same time. Do not open the throttle until all brakes have had time to release.

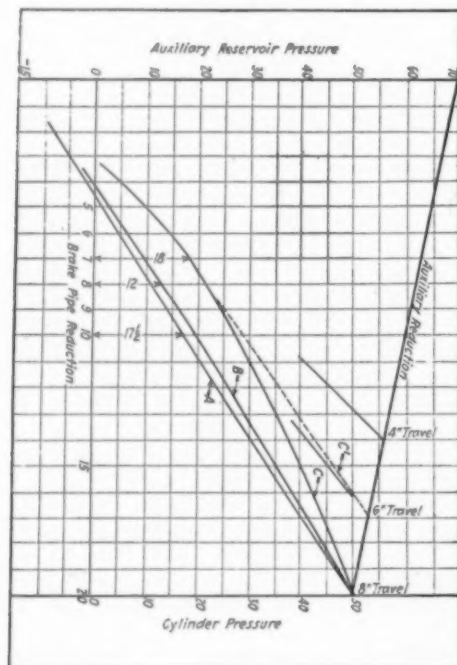


Fig. 1

For slow speed stops, do not shut off and immediately apply the brakes. Either shut off gradually a few seconds previously, according to conditions, or apply the brakes to a proper degree and later reduce the throttle gradually until shut off.

A few seconds of time allowance for the effect of the action of the throttle and another few seconds between the initial and subsequent reductions is of such vital importance in the operation of long passenger trains that the time element cannot be ignored, more especially on long trains and slow speed stops.

Sleepers and observation cars at the rear ends of passenger trains, braked at 75 per cent on 50 lb. cylinder pressure (equivalent to 90 per cent on 60 lb.) seldom lose much of their maximum retarding effect because they are not load cars. Day coaches are semi-load cars, while the baggage, mail and express cars just ahead, although braking at 75 per cent when empty, are usually loaded so that the average retarding force is around 45 to 55 per cent of the total load. Forward of these is the locomotive varying from 35 to 41 per cent in brake force, in proportion to the working load. It

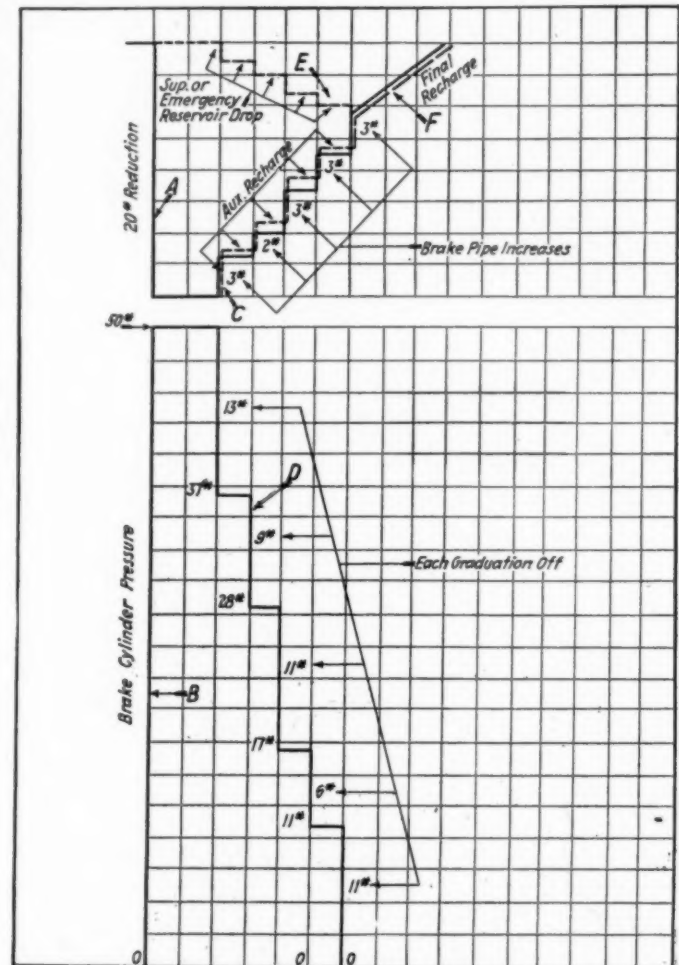


Fig. 2

will be seen that the modern passenger train running forward will stretch after all brakes are applied and stretch harder as the brake force is increased. The opposite is true of a backing train; after all brakes are applied the train bunches and remains so until the brakes are released.

The brakes nearest to the point in the train where the reduction is started are the first to begin to apply. With a train running forward and the brake pipe reduction started from the head end, the tendency is to start bunching. After the brake pipe reduction is effective on the rear, the train stretches again. If the train is backing and the back-up men are controlling, the rear brakes start to apply first which tends to bunch the train, beginning at the rear. Therefore, a very moderate use of steam by the engineer to keep the slack in until he feels the brake begin to hold, will materially assist in producing a smooth stop. This is equally true if the engineman stops the backing train. Do not shut off entirely until the reduction has been sufficient to have all brakes applied throughout the train. Keeping the locomotive brake released at this time assists materially.

Slack Adjustment

The action of the automatic brake is based on piston travel. Very few actually realize what this means. Many cases of rough handling can be traced to short piston travel, leading to inability to develop a low cylinder pressure for a reduction of six to seven pounds. It is true that many of the older forms of passenger foundation brakes have a great deal of deflection, which causes the piston travel to elongate excessively as the cylinder pressure is increased, primarily owing to high total leverage and weak members. Added to this is

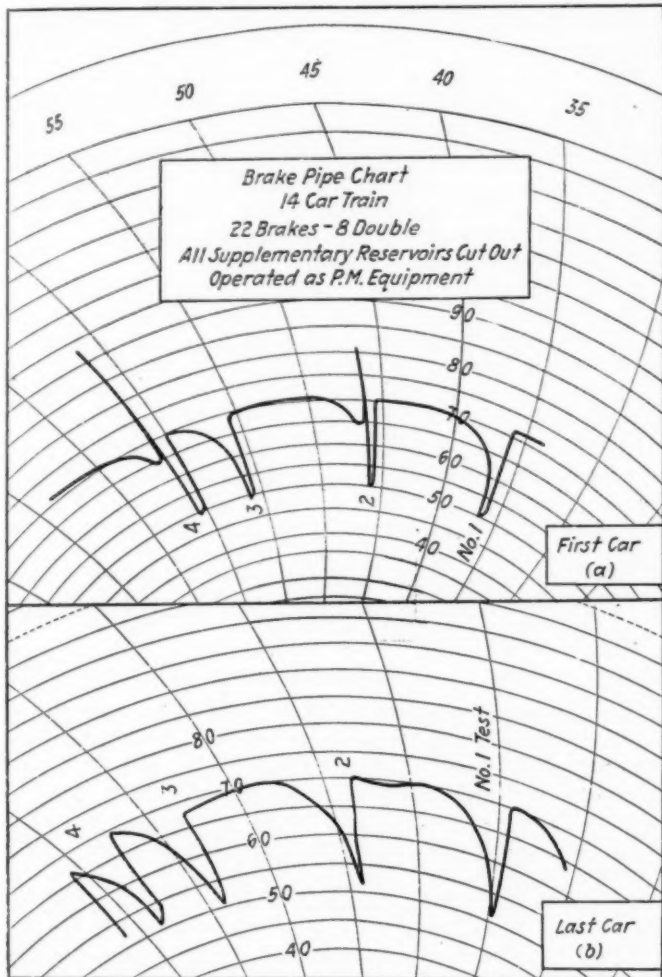


Fig. 3

an increase of $1\frac{1}{2}$ in. to $2\frac{1}{2}$ in. difference between full standing and running travel due to trucks settling.

The modern clasp brake has about $\frac{1}{2}$ in. difference between standing and running piston travel, very little deflection and longer piston travel for the initial reduction, with a corresponding lower pressure at this moment. Clasp brake cars should be adjusted to not less than $7\frac{1}{2}$ in. standing travel with a full service brake application. Roads doing this are getting very good results. Some roads are adjusting the other types of foundation brakes at $7\frac{1}{2}$ in. standing travel also, thereby obtaining smoother brake operation. One property which has only the low hung, single shoe, six wheel trucks, makes it a practice to start the trains with $7\frac{1}{2}$ in. standing travel and let them out at one point on the line on coast trains, about half way between the extreme terminals, thus obtaining better results.

Fig. 1 is illustrative of what is desired and what frequently occurs. Line A represents the desired cylinder pressure per pound of brake pipe reduction. Line B practically represents what occurs with a modern clasp brake, while lines

C and C' show what happens on cars with the least desirable foundation brake conditions. With such brake adjustment as shown on line C, long trains cannot be smoothly handled.

Graduated Release

There are two types of graduated release brakes in use for steam road service, known as LN and UC. When an experienced air brake man thinks over the flexibility of the straight air brake, with its ability to be graduated off to produce less deceleration, he does not wonder that graduated release was incorporated in the automatic brake.

The one application, graduated-off stop, requires less distance than the two application stop, and also less time. It assists in making schedule time. Smoother stops are accomplished because the train slack adjustment is usually made only once and at the beginning of the stop while the speed is highest, and because the brakes are coming off near the end of the stop. The engineman is enabled to correct his judgment of speed and distance after he has used the brakes sufficiently to be sure he is inside the stopping distance by enabling him to graduate off to place the train at the desired location. This avoids an entire release and reapplication,

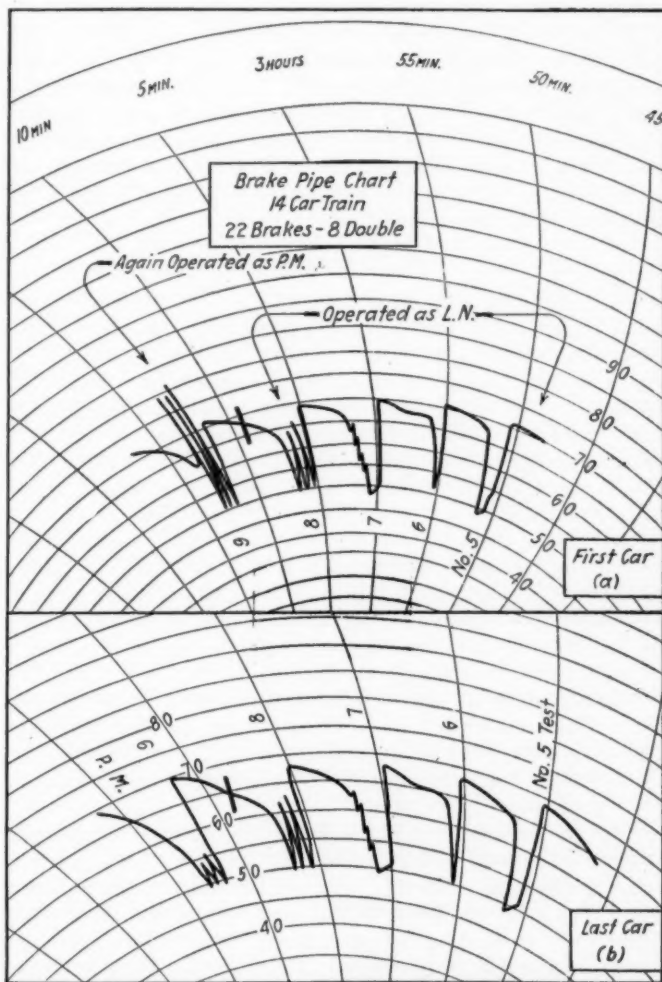


Fig. 4

which, under some conditions of speed and distance to final stopping point causes rough handling.

Where the brakes are graduated off properly, long trains are more easily started because the train stretch is reduced and draft gears released to nominal position while the train is moving. The ability is present more surely to move all triple valve or equalizing portions of brake equipments to release position, causing less stuck brakes because graduated release,

quick recharging brakes require an increase of brake pipe pressure only. This increase can be made quite rapidly.

The auxiliary reservoir recharge is taken care of by the air pressure from the supplementary or emergency reservoirs until the brake is entirely released. This avoids a drain on the brake pipe pressure while the release is being accomplished. It also permits several reapplications of the brake in quick succession without materially depleting the system. After the quick recharge feature has been entirely absorbed, the final finish of the recharge of all reservoirs comes from the locomotive through the brake pipe.

Individual Graduated Release Brake

Fig. 2 illustrates the action of the pressures as caught by gages on an individual graduated release brake. Line *A* represents the brake pipe reduction. Line *B* illustrates the resultant brake cylinder pressure. Lines *C*, solid and dotted, show the increases of brake pipe and auxiliary pressures while graduating off. Line *D* indicates the graduated release of cylinder pressure. Line *E* corresponds to the supplementary or emergency reservoir drop while it is recharging the auxiliary reservoir. Lines at *F* represent the final recharge of reservoirs from the brake pipe.

Figs. 3 and 4 are sections of two recorder charts taken from the forward and rear portions of a 14-car, LN equipped train with 22 brakes; 8 cars having double brakes. All equipment was first operated as PM, the supplementaries being cut out (see Fig. 3). Tests Nos. 1 and 3 are running position releases. Tests Nos. 2 and 4 show release position used for a limited length of time. Observe the slow rise of brake pipe pressure at the rear end of the train on account of the drain by the 22 auxiliary reservoirs.

A Comparison

Compare these with the events on Fig. 4 in which the supplementaries were cut in on the first four of these tests. Test No. 5 shows running position release. Test No. 6 shows release position, then running position the balance of the time. Test No. 7 shows running position and lap step-ups. Test No. 8 shows running position, three releases and three reapplications in quick succession. Note the rapid and nearly equal rise of the rear and forward brake pipe pressures on each release. Test No. 9 shows supplementaries cut out again and three similar releases and reapplications. This time the brake valve was used in release position only until the forward brake piston returned into the cylinder, when a reapplication was made. Note how impossible it was to drive the air through the brake pipe rapidly owing to absorption by the numerous auxiliary reservoirs.

Usually about 50 sec. or less are consumed in making the stop, while not longer than 15 to 20 sec. of this are used while the brakes are being graduated off. The average time for the long train two-application stop requires from 60 to 75 sec., if done as intended.

Two positions of the brake valve are used to increase the brake pipe pressure while graduating off, the release position and the running position. The release position furnishes a rapid rise, generally used for the first graduations off on long trains, for recharging on grades or for releasing the last graduation where it is desired to reduce the cylinder pressure quickly. The running position supplies a smaller, but effective opening for subsequent graduation on long trains and all graduations off on shorter trains.

75 Per Cent Sufficient

Frequently graduated release trains contain a few PM equipment brakes. It has been shown that if three-fourths of the train is graduated release equipment, good graduated release operation can be performed. When PM equipment cars are in graduated release trains, they release entirely when the first graduation off is made. A good graduated

release engineer will pay no attention to a few PM cars. He usually governs himself by way the train decelerates after the first graduation off.

Retaining valves should be used on graduated release trains, the same as PM equipment trains, whenever the brakes cannot be recharged to 80 lb. When operating with retaining valves, be sure that the application is sufficient to insure a release, so that the train is retarded by retaining valves and not by sticking brakes. Graduated release must not be used when retaining valves are in operation. Where retaining valves are not cut in and graduated release is depended on, not more than one release graduation should be used between complete recharges. Use release position of the brake valve when recharging and follow with a kick-off.

Where trouble is experienced with brakes sticking on graduated release equipment after locomotives are changed, or switch engines are used to change the make-up of train, this is primarily caused by a difference of brake pipe pressure adjustment on the different locomotives. The locomotive not experiencing this trouble has the higher pressure, possibly too much, while the one having the trouble has the lower pressure, possibly below the authorized amount.

A good practice to follow when changing engines is to leave the brakes applied by the delivering engine after stopping. The receiving engine releases them and when the test of the brakes is made, it will eliminate any trouble due to a slight difference of air pressures between the two locomotives.

All road engines should have the regulators set close to a uniform pressure, and all switch engines should have available air pressure adjustment so that when handling a train the pressure can be raised to the amount authorized for that train.

The report was signed by James Elder, C. M. & St. P.; W. J. Devine, C. & N. W., and L. M. Carlton, Westinghouse Air Brake Company.

Discussion

The discussion of this paper dealt largely with the relative merits of the graduated and direct release. It was brought out that many engineers liked the graduated release better on account of being able to make smoother stops with greater ease than with the direct release. Some of the roads handling heavy passenger trains use the graduated release on all trains equipped with the PC equipment and require the use of direct release on trains equipped with the LN equipment. On account of the large number of roads having to handle Pullman equipment in the same train with company owned cars the fact was brought out that the Pullman Company recommended the use of the universal equipment on all of its cars, as the UC type is designed to operate with the PC, LN, or with any other type of brake equipment.

The discussion brought out that there are two principal factors entering into the decision as to what release should be adopted. One is the operating conditions, which must be given careful consideration; the other is the amount of instruction that can be given to enginemen. The effect of climatic conditions such as are encountered by the roads in Canada, as well as the character of the terrain through which the roads runs, have a vital effect on brake operation, and the roads are required to adopt equipment that would permit the greatest factor of safety and reduce wear on the brake shoes and slide flat wheels to the minimum.

The question of the use of the retainer was brought up by the president and it seemed to be the opinion of the convention that the retainer should not be used with the graduated release. One member stated that his road left the use of the retainer up to the judgment of the engineman and conductor and after a short time it was discovered that its use had gradually died out. Various opinions were expressed as to the use of the graduated release with the PM and LN

equipment. Some members reported that their roads used the graduated release with both types and were getting very good results.

Interesting Employees in the Study of Air Brakes

By J. P. Stewart

We know of very few subjects on which knowledge can be as extensively and easily obtained, and at as small a cost, as knowledge of the air brake equipment. Pamphlets, that are interesting and attractive are published by the manufacturing companies and gladly sent to applicants, postage paid, for the mere asking. Pages in the different railway and union magazines are devoted to explaining and picturing the features of the equipment. So it is possible for any man to build up a nice technical library on this subject with practically no cost. For a very modest price the splendid books which the Air Brake Association publishes are to be had. Then the railways and other companies place means of instruction and education at the command of the men.

But in spite of all these opportunities we have to admit that there is a failure somewhere. As a result the average railway man begins to grow restless as soon as the subject of instruction is broached. And I fear this is a condition that will continue to exist until some one makes an instruction class appear as attractive as a musical comedy or a band concert.

We want it understood in the beginning that we do not believe that railway employees are ignorant. On the contrary, we believe that the men with whom we work are above the average in general knowledge and intelligence. And we do not believe that the railway man of today is in any way inferior to his brother of yesterday. Those were evidently good days when the old timer used to set his own valves and mix his own pin grease. In those days all the engineer had to look after was eight wheels and a pair of eccentrics. Today, however, instead of working with a monkey wrench so much, the engineman has to be working his head. With the larger trains, bigger engines, faster schedules, and labor saving devices, such as stokers, ash pan dumps, power reverse and many others that can be named, it is necessary that the engineer use his head more and his back less. Not only does this apply to the man on the head end, but it also applies to all railway employees. And to save our back and use our head we must know how. To know how we must receive proper instruction. But to gain the attention and make the instructions so attractive that the men will want to attend is a difficult undertaking.

Instruction cars and instruction rooms are good. But there are those who attend just as a matter of duty and who at the close of a class are not able to tell what was talked about. There are many like a fireman I met at a small terminal. He came up to the instruction car after closing time and requested permission to register, saying, "I want to get my name on the register so the trainmaster will not make me follow the car. But I have been in the car once, a year ago, and know everything in there." Now this fireman did not know everything in there. In fact, I know that he could not as much as test a feed valve. I fear that the average man wants just enough instruction to get by. As a result instruction cars and instruction rooms lose their hold as soon as the newness wears off. But if properly backed up we believe they can accomplish great good.

In giving instructions it is strongly urged that the instructor should be careful not to mix his classes or his subjects. What is of interest to the men working on triple valves at the bench is not of vital interest to the enginemen. What the engineman wants to hear about is train control. What the

repair man wants to hear about is how to do the repair work. Find out what the men want and give it to them. It is a poor instructor who can't work in the necessary things he should and wants to say.

This committee would like to recommend that every air brake instructor, road foreman of engines, and every official secure copies of the instruction pamphlets issued by the Westinghouse Air Brake Company, and read the preface entitled "How to Study the Air Brake."

Arrange for places where the men can loaf and talk air brake, or settle arguments. Encourage arguments. By that way we get the other fellow's opinions and ideas. Have charts and books and parts of the equipment where the men can have access to them just by themselves. If possible have an office or room at each terminal where the men can get the information necessary to decide their arguments, and where they will like to loaf. Then surround them with air brake material, literature and charts. Have the men understand that this is their room. If you haven't any club room or recreation room at that terminal, have some card tables and checker boards in your instruction room. Make it attractive.

Talk to the new firemen. Have them understand that before they become enginemen they must understand the air brake equipment. And have them understand that the only method is to start studying when they start firing. Then have first, second and third year examinations of firemen. In these examinations have some air brake questions suitable for a man with their length of service, and insist on the men passing these examinations. Then have a good, stiff examination when the fireman comes up for promotion.

It should be made possible for the men to keep posted on all new devices. Make it interesting for them to talk about these devices. And then try and have your company require the men operating and maintaining the air brake equipment to take an examination at least every three years. Men maintaining and operating air brake equipment are in a position such that a failure on their part, or a misunderstanding of the proper method of doing their work, may result in great loss. To the man who is willing and trying to learn and advance, the examination will be welcome. For the man who just wants to get by, the examination is a necessity.

Never fail to take time to answer questions, regardless of how small or how foolish they may be. If some one asks a question that is new or has you guessing, play fair and tell him that he shows good sense in getting that deeply into the subject, and that you will have to study it out before answering. Don't try to bluff it out by getting technical; the more you talk the worse you will be in. All the men in the class will enjoy your embarrassment, and also lose confidence in your teachings.

If possible, form air brake clubs during the winter months, and have monthly or semi-monthly meetings. Have the men from two or three terminals at each meeting, and create rivalry between the terminals as to who can produce the best paper. To do this it is necessary to have the transportation department with you. This can be done by having the transportation officials as members of your club.

Discussion

A brief discussion of Mr. Stewart's paper brought out the necessity of getting something new to keep the men's interest aroused in their work. The instruction car should be made attractive so as to make the men want to use it. The idea of arousing a competitive spirit among the men by choosing some man having a high standing and using him as an example was also suggested as getting good results.

Reclamation of Air Brake Material

Paper on the Reclamation of Air Brake Material, by A. Skinner, A. T. & S. F., and Reclamation of Hose and Fittings,

by James C. Griggs, A. T. & S. F., illustrated by lantern slides, were discussed jointly by the convention. The discussion centered on the method by which the actual savings were computed and several of the members gave comparative statistics of results that had been obtained on various other roads. The savings obtained on the Santa Fe were determined from the annual inventory, and on 17,498 pieces of air brake material, including feed valves, triple valves, angle cocks, cut-out cocks, brake valves, etc., reclaimed from November 1, 1922, to October 31, 1923, amounted to \$33,096.61. The material was reclaimed at a cost of \$18,071.87.

[An account of the final proceedings and election of officers will appear in a later issue.—EDITOR.]

I. C. C. Objects to Control by Coal Company

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION has undertaken to exercise its power to withhold authority for the construction of a new railroad to prevent control of a new line in the interest of a coal company. The commission, after a rehearing, has issued a conditional finding that public convenience and necessity will require the construction and operation by the Jefferson & Southwestern of a railroad from Mt. Vernon to Nason, Ill., at which a coal mine is being developed, and for about three miles westerly to a connection with the Chicago, Burlington & Quincy, if and when a valid arrangement has been made and approved by the commission under which the connecting railroads will be afforded an opportunity, at any time within five years, jointly or severally to assume control of the new railroad company by purchase of stock or by lease. On March 14, 1923, the commission had denied the company a certificate but with the approval of the Illinois Commerce Commission it has built the line from Mt. Vernon to Nason and is operating as an intrastate carrier.

The line was projected in the interest of the Illinois Coal Corporation but stock subscriptions have been taken from persons not stockholders of the coal company, as the commission says, "undoubtedly because of the commodities clause." After stating that "there seems little disposition to deny that public convenience and necessity require the building by some agency of some line of railroad which will serve the new mine at Nason" the commission's report says in part:

Control of or affiliation with a short-line railroad by an industry furnishing a large volume of traffic opens the door to grave abuse, particularly when the short line connects with more than one trunk-line railroad. By playing one connection against the other they have frequently been able to gain concessions in divisions, or in car supply, or in other matters, which have, in practical effect, amounted to a preference of, or rebate to, the controlling or affiliated industry. Many such cases have taken our time and attention in the past, and they continually arise. Moreover, the connecting trunk lines, because of their competition with each other, often hesitate to bring such cases to our attention, and they have usually been considered either upon our initiative or upon complaint of some industry which is aggrieved by the preference. While the abuse has been limited by our regulation, it is doubtful whether it has been abated. It is not surprising that carriers like the Burlington fear the advent of a short-line industrial railroad in the southern Illinois coal field.

We are not empowered to administer or enforce the commodities clause, but certainly we ought not to grant a certificate of public convenience and necessity for the construction of a railroad whose operation, it seems reasonable to believe, may prove to be in violation of that clause. In our opinion, however, the dangers against which the commodities clause was directed may in this case be avoided by the attachment of a condition to the issuance of the certificate. Plainly, we are not limited to the mere grant or denial of the certificate sought for, but may shape our action in many intermediate forms to meet the public need.

Railroads like the one here projected, to be built as a single outlet to two or more trunk-line connections, might well be owned, as many urban terminal lines are owned, jointly by such connections. By such ownership the convenience and economy of operation which inhere in one well-located feeder line as compared with two or more separately owned spur track connections can be retained, and at the same time the dangers of too liberal divisions or other forms of indirect preference to the traffic-furnishing industry can be avoided. Yet inability to agree upon such a plan of joint ownership might hinder or delay the building of such a line, if its construction were left solely to the initiative of the trunk lines. The problem is to combine the initiative of the industry, anxious to obtain at an early date the best possible rail connection with the outside world, with a condition attached to the certificate which will protect the trunk lines and the public against undue exactions.

The problem may be solved, it seems to us, by withholding the issuance of the certificate of convenience and necessity until some valid arrangement has been made and has received our approval under which the Chicago, Burlington & Quincy, the Chicago & Eastern Illinois, the Louisville & Nashville, the Southern, and the Wabash, Chester & Western shall have the opportunity at any time within a period of not less than five years, jointly to the extent that they may desire to participate but severally if but one of said companies wishes to utilize the opportunity, to assume control of the new railroad company by purchasing at par such stock of applicant as may be issued with our approval under section 20a of the Interstate Commerce Act or by leasing its property. This arrangement may take the form of a declaration of trust or a contract or any other instrument that will lawfully accomplish the result desired and meet with our approval.

Such an arrangement would, in our opinion, go far to eliminate in this case the public dangers against which the commodities clause was directed. Whether it would also, together with the precautions which have been taken by the promoters of applicant, avoid the technical application of that clause is not for us to decide. It is enough to say that it leaves that question in sufficient doubt so that we believe that we are justified in proceeding along the lines indicated.

Upon the facts presented we find that, if and when a valid arrangement of the character above described has received our approval, the present and future public convenience and necessity will require the construction and operation by applicant of the line of railroad in Jefferson County, Ill., described in the application. We further find that the matters of record do not justify the grant of permission to retain excess earnings and such request will be denied. The proceeding will for the present be held open and an appropriate certificate and order will be entered in the event above specified.

Commissioner Hall Dissents

Chairman Hall in a dissenting opinion says:

The gist of the conclusion reached by the majority seems to be that the present and future public convenience and necessity will require the construction and operation by applicant of the line of railroad described in its application, but only on condition that applicant will bind itself to abdicate in favor of some other common carrier or carriers at any time within five years.

Such a conclusion is self-contradictory. If public convenience and necessity require operation by applicant how can they require surrender of that operation to a would-be lessee, or an option on applicant's stock, at par, to a non-applicant carrier? It seems to me that if "present and future public convenience and necessity" will not warrant construction and operation by applicant in the absence of such a condition acceptance of the condition will not supply the defect and the application should be denied. But, as it is, if the condition should prove to be void, because beyond our power to exact, the finding will apparently stand and the certificate must issue.

Commissioner Aitchison also dissented, saying:

In my opinion the question presented for our decision under the statute is whether the present or future public convenience and necessity require or will require the operation of this line of railway and that such question should be determined by us without reference to conditions as to what corporation shall own or operate the railway, or whether the owner or operator hereafter may conceivably violate the commodities clause or some other statute. The conditions sought to be imposed by the majority are in my view of the issue beyond our power in a proceeding of this character. As the applicant has shown that the public convenience and necessity require, and will require, the operation of the railway in interstate commerce, as it is now being operated in intrastate commerce by authority of the state of Illinois under a similar statute, a certificate should issue, without conditions, as prayed. Commissioner Cox authorizes me to state that he joins in this expression of dissent.

Discontinuance of Surcharge Recommended

I. C. C. Examiner Thinks Contracts With Pullman Company Should Be Readjusted

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION on May 2 made public a proposed report by Examiner John B. Keeler recommending that the commission find that the practice of assessing a surcharge on Pullman car travel is unjust and unreasonable and order it discontinued, on the ground that payments for Pullman service should be through the Pullman charge proper and that if necessary the Pullman charges should be so adjusted as to produce the revenue necessary to enable the Pullman Company to meet its obligations to the railroads and also provide a fair return on its own operations. The examiner also criticized some of the contracts between the railroads and the Pullman Company and recommended that the commission ask Congress for jurisdiction to prescribe terms and conditions under which Pullman cars shall be operated, with a view to readjustment of the contracts where that is considered necessary. The reasons advanced for such a finding are summarized in the examiner's report as follows:

"Considering that in connection with the handling of Pullman traffic as compared with day coach traffic respondents are saved the capital investment in Pullman equipment and other facilities necessary to maintain and to an extent operate the cars; that they are saved the expense of inside cleaning of the cars; that they are saved the cost of repairs and maintenance of the cars; that most of respondents are receiving substantial payments out of the charges collected for the Pullman service proper; that the greater part of the surcharge is collected for the roads which are receiving the heaviest payments from the Pullman Company; that the average haul of Pullman passengers is several times the average haul of coach passengers; that most of the Pullman travel is over the parts of respondents' lines which have the greatest density of traffic and lowest ton-mile operating costs; that Pullman cars are utilized to a considerable extent in the transportation of railroad officials and employees engaged in other branches of railroad service; that there can be enforced without unduly inconveniencing the traveling public more economical use of space on many roads; that the present passenger fare was established for application to both coach and Pullman travel; that there has been no reduction in passenger charges corresponding to the reduction made in 1922 in freight charges and the relationship prescribed in 1920 between passenger and freight charges has accordingly been disturbed; that there will probably be some stimulation of Pullman business as a result of the removal of the surcharge; and, further, because if, as contended by respondents, they are not adequately compensated under their contracts for hauling the greater weight per passenger in the Pullman cars, and furnishing the other extra services in connection with the hauling of the Pullman cars, they should secure that extra compensation from the Pullman Company rather than through a separate charge for what should be treated as one service, it is believed that the time has come when the commission may well eliminate the surcharge."

History of the Investigation

This investigation, instituted by order of the commission of April 2, 1923, had for its purpose the determination of the propriety and reasonableness of the charges assessed by the Pullman Company and the railroads for the transportation and accommodation of passengers in sleeping and parlor cars. At the time there was pending before the commission No. 11567, *Order of United Commercial Travelers of*

America v. Pullman Company, in which the charges of the Pullman Company were under attack. It developed during the course of the hearings that much of the dissatisfaction of the traveling public with the charges for sleeping and parlor car accommodations arose from the so-called surcharge. The desirability of making a general examination of the accounts of the Pullman Company also developed, and the commission accordingly instituted this investigation, consolidating therewith No. 11567. The public not having had full opportunity to be heard with regard to the surcharge during the hearings in No. 11567, hearings on the surcharge feature of the investigation were held at Chicago, Ill.; San Francisco, Cal.; Portland, Me., and Washington, D. C., during the summer and fall of 1923. It was hoped that the accounting examination could be completed so that both the surcharge and the Pullman charges proper could be considered at the same time, but that examination proved to be a task of such magnitude and intricacy that it was found impossible to have the results available without unduly delaying disposition of the surcharge feature. It was accordingly decided that that feature should be disposed of separately, and final hearing was held on March 19. Briefs were presented on April 19 and the matter now stands set for oral argument before the whole commission on May 8.

The examiner's report includes some interesting data regarding Pullman traffic and the relations between the railroads and the Pullman Company. An abstract follows:

Abstract of Examiner's Report

The present surcharge, which is applicable to all interstate Pullman travel, and to all intrastate Pullman travel except in the states of North Carolina and West Virginia, amounts to approximately ten per cent of the one-way passenger fare and yields approximately 3.3 mills per passenger mile from passengers traveling in standard Pullman cars and one-half of that amount from passengers traveling in tourist cars. In 1922 it produced revenue of \$32,891,124, and in 1923, \$37,490,869, or slightly over 3 per cent of the total passenger revenues of respondents for those years. By districts the surcharge amounted in 1922 to \$14,872,004 for the eastern, including the Pocahontas region, \$13,780,549 for the western, and \$4,238,571 for the southern, and in 1923 \$16,035,003 for the eastern, \$15,695,403 for the western, and \$5,760,463 for the southern. In the amounts shown for 1923 the Pocahontas region is included in the southern district.

Respondents seek to justify the continuance of the surcharge on two general grounds, *first*, that it costs them more to transport passengers in Pullman cars than in day coaches, and, *second*, that the superior accommodations furnished passengers in Pullman cars justifies charging them a higher transportation rate than charged passengers using the day coaches.

Weight Per Passenger

Chief among the things cited by respondents as creating the alleged higher cost to them of handling the Pullman traffic is the greater weight transported per passenger. Respondents made studies to ascertain, among other things, the average weight, occupancy and earnings of Pullman cars as contrasted with day coaches, and the results are set forth below:

	Average Weight		Average Occupancy		Average Car-mile Earnings	
	Pullman Cars	Day Coaches	Pullman Cars	Day Coaches	Pullman Cars (Cents)	Day Coaches (Cents)
Eastern District.	148,915	124,140	13.59 ₂	27.44	43.5	87.8
Western District.	144,640	97,647	11.46	14.36	36.95	46.27
Southern District	148,987	110,068	11.30	19.21	36.5	62.1

₁ Excluding surcharge.

₂ Sleeping cars—Parlor Car Occupancy 18.56.

The figures submitted for the eastern and southern districts are based on studies covering selected runs for one week in May,

1923. While respondents were undoubtedly sincere in endeavoring to select runs which they considered representative, it is obvious that the judgment exercised in making the choice might materially affect the results. Furthermore, the studies which are based on the heavier passenger carrying sections of defendants' lines are not fair to the Pullman traffic, at least from the standpoint of occupancy and car-mile earnings, for they constitute a comparison of the normal Pullman travel with the best of the coach travel. Comparisons of results of Pullman and coach operations should be predicated on the entire business of both services. The figures shown for the western district present perhaps the fairest comparison, but even these, in the case of car weights at least, are fairly subject to criticism, as they do not reflect the varying use of different classes of cars. In other words, the average car weights shown are not weighted averages. It is reasonably certain, however, that the average weight of Pullman cars is considerably greater than the average weight of day coaches. But there are many individual steel coaches that weigh nearly as much as the steel Pullman cars and more than the wooden Pullman cars, and there is as great or greater difference in weight between different classes of day coaches as between day coaches and Pullman cars. Furthermore, the heavy steel coaches are usually used in trains carrying steel Pullman cars on the long heavy passenger runs. Figures submitted by the Pullman company show that for the month of April, 1923, the average occupancy of sleeping cars was 14.44 passengers and of parlor cars 17.77 passengers. The average occupancy of all coaches in the United States for 1922, excluding commutation travel, was 15.88 passengers and of all sleeping and parlor cars 12.82 passengers. The average car-mile earnings for the United States were 52.69 cents for coaches and 42.55 cents for sleeping and parlor cars, excluding the surcharge.

Among other things cited by respondents as creating the alleged higher operating costs to them of handling the Pullman traffic are extra switching incident to parking sleeping cars at stations for use by passengers prior to train departures or subsequent to train arrivals; added use of passenger terminals by reason of such parking and the necessity of keeping available different classes of Pullman cars to meet the varying demands of Pullman travel; extra switching at junction points of Pullman cars in connection with through travel and at terminals in making up trains; furnishing of sanitary cans for Pullman cars parked at stations; greater deadheading; furnishing and hauling of observation cars and other special facilities; and greater use of the telephone and telegraph service in arranging Pullman accommodations.

Against the added expenses to respondents of handling the Pullman traffic already enumerated there is among other things the saving of capital investment in and maintenance and inside cleaning of the Pullman cars. In the case of the Pennsylvania, New York Central and New York, New Haven & Hartford there is a further saving of running expenses as hereinafter more specifically set forth.

Railroad Revenue from Pullman Contracts

Table I shows for 1923 the revenue accruing to respondents under their contracts with the Pullman Company.

TABLE I—REVENUE FROM PULLMAN CONTRACTS, 1923

Eastern District—					
	Average number of Pullman cars operated	Pullman contract revenue due railroads	Average contract revenue per car operated	Number of Pullman cars miles run	Average mileage per car
Baltimore & Ohio.....	202.69	\$97,077	\$479	28,313,373	139,688
Chesapeake & Ohio.....	50.26	88,002	1,751	6,761,756	134,536
Chicago & Eastern Illinois.....	36.84	3,375	92	4,573,495	124,145
Delaware, Lackawanna & Western.....	43.54	34,915	802	4,931,766	113,270
Delaware & Hudson.....	15.40	48,494	3,149	1,844,033	119,742
Erie.....	30.54	30,728	1,006	4,860,796	159,162
Lehigh Valley.....	37.69	42,304	1,122	5,174,027	137,279
Norfolk & Western.....	46.14	35,963	779	6,079,835	131,769
New York Central System.....	820.81	512,502	624	124,952,194	152,230
New York, New Haven & Hartford.....	195.74	140,000	715	17,296,041	88,362
Pennsylvania System.....	838.02	574,661	686	122,133,734	145,741
Richmond, Fredericksburg & Potomac.....	27.45	54,368	1,981	3,926,617	143,046
Total.....		\$1,662,388			
Southern District—					
Alabama & Vicksburg.....	2.43	\$2,632	1,083	319,682	131,556
Alabama Great Southern.....	10.49	23,215	2,213	1,698,160	161,884
Atlantic Coast Line.....	126.45	115,971	917	20,285,660	160,424
Cincinnati, New Orleans & Texas Pacific.....	27.59	38,638	1,400	4,505,158	163,290
Florida East Coast.....	39.84	78,000	1,958	6,175,920	155,018
Illinois Central.....	113.77	296,627	2,607	18,173,956	159,743
Louisville & Nashville (incl. Georgia R. R.).....	144.12	68,920	478	20,086,361	139,372
Nashville, Chattanooga & St. Louis.....	31.70	15,719	496	3,760,209	118,619
New Orleans & Northeastern.....	5.06	5,971	1,180	839,449	165,899
Seaboard Air Line.....	75.45	55,493	735	10,918,907	144,717
Southern Ry.....	178.01	512,351	2,873	25,175,597	141,428
Western of Alabama.....	7.90	26,596	3,367	1,409,796	178,455
Total.....		\$1,240,134			

Western District—					
Atchison, Topeka & Santa Fe.....	377.83	\$1,255,159	3,322	67,075,263	177,528
Chicago & Alton.....	38.51	7,817	203	4,172,084	108,338
Chicago, Burl. & Quincy.....	161.61	489,978	3,032	25,922,493	160,402
Colorado & Southern.....	26.76	72,631	2,714	3,330,786	124,469
Chicago & North Western.....	132.86	419,137	3,155	21,547,124	162,179
Chicago, St. Paul, Minneapolis & Omaha.....	28.43	90,277	3,175	3,963,871	139,426
Chicago, Rock Island & Pacific.....	165.40	376,945	2,279	25,009,986	151,209
Denver & Rio Grande West.....	48.90	34,060	697	6,691,220	136,835
El Paso & Southwestern System.....	18.12	10,240	705	3,289,460	181,538
Gulf Coast Lines.....	15.37	11,018	717	1,993,090	129,674
Los Angeles & Salt Lake.....	52.41	275,838	5,263	9,078,089	173,213
Missouri - Kansas - Texas Lines.....	81.54	7,941	97	10,808,965	132,552
Missouri Pacific (incl. St. L., I. M. & S.).....	99.79	16,588	166	12,787,445	128,144
Northern Pacific.....	110.44	294,904	2,670	16,960,400	153,571
St. Louis-San Francisco.....	91.93	191,989	2,079	11,411,370	124,131
Southern Pacific Co.....	455.06	1,703,267	3,743	67,635,721	148,630
Texas & Pacific.....	48.56	34,328	707	6,033,624	124,230
Union Pacific System.....	263.10	939,834	3,572	45,450,515	172,750
Western Pacific.....	24.13	24,819	1,029	4,215,995	174,720
Total.....		\$6,255,869			
Total United States.....		\$9,158,391			

In addition to the payments of contract revenue to the Pennsylvania and New York Central indicated above, the Pullman Company paid on these two lines all running Pullman car expenses such as expenses for lubrication, ice, water, heat, and light. On the New York, New Haven & Hartford the Pullman Company bore a large part, but possibly not all, of these running expenses. The aggregate amount of running expenses borne by the Pullman Company on these three roads was \$3,282,629.81, divided as follows:

		Average per car
New York Central System.....	\$1,611,230	\$1.963
Pennsylvania System.....	1,451,485	1.732
New York, New Haven & Hartford.....	219,915	1.124

Adding to these payments for running expenses the contract revenue payments results in aggregate per car payments by the Pullman Company to the three roads in question during 1923 of \$2,587 in the case of the New York Central, \$2,418 in the case of the Pennsylvania and \$1,839 in the case of the New York, New Haven & Hartford.

The railroads which, owing to low Pullman earnings, did not participate in the Pullman revenues accruing on their lines during 1923, are shown below:

TABLE II—RAILROAD NOT PARTICIPATING IN PULLMAN REVENUES

	Aver. number of Pullman cars operated	Number of Pullman cars miles run	Average mileage per car
Eastern District—			
Buffalo, Rochester & Pittsburgh.....	4.23	467,372	110,490
Central of New Jersey.....	16.54	1,264,597	76,457
Chicago, Indianapolis & Louisville.....	30.35	2,702,383	89,041
Hocking Valley.....	3.74	226,901	60,669
New York, Chicago & St. Louis.....	9.15	1,412,337	154,354
New York, Chicago & St. Louis (Clover Leaf Dist.).....	2.02	332,656	164,681
Toledo, Peoria & Western.....	1.32	74,227	56,233
Wabash.....	60.68	7,428,341	122,418
Western Maryland.....	.22	13,371	60,777
Southern District—			
Atlanta, Birmingham & Atlantic.....	3.71	388,108	104,611
Georgia, Southern & Florida.....	14.14	1,979,492	139,992
Mobile & Ohio.....	7.80	1,181,763	151,508
Western District—			
Chicago Great Western.....	30.15	3,985,971	132,205
International & Gt. Northern.....	16.14	2,122,159	131,484
Kansas City Southern.....	16.58	1,917,153	115,630
Minneapolis & St. Louis.....	5.73	649,124	113,285
Minneapolis, St. Paul & S. S. Marie.....	19.35	2,909,417	150,357
San Antonio & Aransas Pass.....	2.22	115,600	52,072
San Antonio, Uvalde & Gulf.....	3.13	216,547	69,184
St. Louis Southwestern and St. Louis Southwestern of Texas.....	12.82	1,500,234	117,023
Spokane, Portland & Seattle.....	13.40	1,873,571	139,819
Vicksburg, Shreveport & Pacific.....	3.59	432,216	120,394

Contrast Between Baltimore & Ohio and Pennsylvania

It is interesting to note that the Baltimore & Ohio during 1922 received no revenue from the Pullman Company under its contract, and in 1923 received less than \$500 per car, whereas its chief competitor, the Pennsylvania, received the equivalent of \$2,500 per car for each year. This indicates one of two things, either that the contract between the Pullman Company and the Baltimore & Ohio is very much less favorable to the Baltimore & Ohio than the contract between the Pullman Company and the Pennsylvania is to the Pennsylvania, or that the Baltimore & Ohio is running much more space per passenger carried than the Pennsylvania. In this connection it may be stated that studies of Pullman car occupancy submitted in evidence indicate that on many roads sleeping cars are operated practically on a lower berth basis. It would seem that somewhat greater use of upper

berths could be enforced on many roads without seriously inconveniencing the traveling public.

Surcharge Collections

There is set forth as an appendix hereto a statement showing for Class I railroads surcharge collections and rate of return on investment for 1923. The rate of return is computed on basis of the 1922 investment and 1923 net railway operating income. Of the \$16,035,033 surcharge collected in the eastern district \$13,664,541 accrued to the New York Central, Pennsylvania, New Haven and Baltimore & Ohio system lines. Of these all but the Baltimore & Ohio received heavy payments from the Pullman Company under their contracts, the average being approximately \$2,500 per car. Of the remaining \$2,370,462 the Delaware & Hudson, Lehigh Valley and Erie with contract payments of \$3,149, \$1,122, and \$1,006 per car respectively, received \$449,365, leaving less than \$2,000,000 received by roads which had no contract payments or payments of less than \$1,000 per car. The situation on the Baltimore & Ohio, which is something of an enigma, has already been commented on. In the western district 11 railroads, receiving from the Pullman Company contract payments averaging \$3,274 per car, received \$10,552,892 of the \$15,695,403 surcharge collected. Eleven other railroads receiving contract payments ranging from \$97 to \$1,029 per car received \$1,999,425 of the remainder of \$5,142,511. Of the latter, the Chicago, Milwaukee & St. Paul, which operates its own cars, and therefore received all the revenue from the sale of parlor and sleeping car space, collected \$761,866. In the southern district, 10 railroads with average contract payments from the Pullman Company of \$2,434 per car, received \$3,010,066 of the \$5,760,463 surcharge collected in that district, and five other railroads with contract payments ranging from \$478 to \$917 per car collected \$2,081,693 of the remainder of \$2,750,397. From the above it will be seen that the greater part of the surcharge goes to railroads which receive substantial payments from the Pullman Company under their contracts.

Effect of Surcharge in Pullman Travel

The extent, if any, to which the surcharge has curtailed travel on Pullman cars is somewhat conjectural. Respondents submitted statistics showing that over a period of years Pullman travel has increased in greater ratio than day coach travel, and that since the establishment of the surcharge the falling off of Pullman travel has not been as great as the falling off of coach travel. Immediately following the establishment of the surcharge there was a marked falling off of Pullman travel, but this was undoubtedly due in considerable measure to the fact that the deflation period commenced at about that time. The sleeping and parlor car passenger miles for the years 1919 to 1922, inclusive, were 13,387,182,735, 14,279,557,237, 11,133,647,492, and 11,233,301,727, respectively, while the coach passenger miles for the same period were 32,971,121,005, 32,569,110,750, 26,178,938,474, and 24,273,920,273, respectively. Commencing with 100 per cent for 1919 as a premise, the sleeping and parlor passenger miles increased to 106.67 per cent in 1920, and decreased to 83.17 and 83.91 per cent, respectively, in 1921 and 1922, whereas the coach passenger miles decreased to 98.78 per cent in 1920, 79.40 per cent in 1921, and 73.62 per cent in 1922. There is, of course, no way of ascertaining what the situation would have been had the surcharge not been in effect. It is reasonable to believe, however, especially considering that it has been a great irritant to the traveling public, that the surcharge has resulted in considerable loss of business from the Pullman cars.

Surcharge System Called Illogical

In the early days of the operation of Pullman cars the Pullman Company received all the revenue from the sale of seats and berths and in addition the railroads generally paid the Pullman Company mileage for the use of the cars in the event that the revenue derived from the sale of seats and berths did not reach specified minimum amounts. As the Pullman business grew, railroad participation in the Pullman earnings commenced and has steadily increased, until today it amounts to over \$9,000,000 a year. It would seem that if the early arrangements were advantageous to the railroads the present-day arrangements should be very much more so without the imposition of the surcharge. But assuming that, as contended by the railroads, they are not adequately compensated under their contracts with the Pullman Company for hauling the greater weight per passenger in the Pullman cars does that constitute a ground for imposing a surcharge to recoup losses growing out of their improvidence in failing to make contracts which would afford them proper compensation for the service of hauling the cars? In our judgment it does not.

The Pullman passenger receives a higher class of service than the coach passenger and should pay more for it, but the payments should be through the Pullman charge proper and not spread out in two charges, one collected by the Pullman Com-

pany and the other by the railroad. Under such an arrangement the Pullman charges could be so adjusted as to produce the revenue necessary to enable the Pullman Company to meet its obligations to the railroads and also provide a fair return on its own operations. Under the present system, with two transportation agencies charging for what should be one service, opportunity for duplicate and excessive charges is multiplied and regulation rendered more difficult. The present system, devised temporarily to meet an emergency, is illogical and unscientific as a permanency.

Pullman Contracts Criticized

Greater uniformity in the contracts between the Pullman Company and the railroads would seem to be desirable. The present contracts are the result of bargaining between the Pullman Company and the railroads with the natural result of the larger roads getting the more favorable contracts. There is also considerable variation in the contracts with the larger roads. For instance, on the Southern Pacific there is participation by that road in the Pullman earnings after the earnings per standard car average \$7,250, whereas on the Santa Fe there is no participation by the railroad until the per-car earnings, speaking still of standard cars, average \$9,000. Of course, it must be taken into consideration that the Southern Pacific contract was made in 1912, at a time when operating costs were much lower than at present, whereas the Santa Fe contract was made in 1923. But the Southern Pacific contract has six years yet to run, and assuming that at the end of that period it is succeeded by the same class of contract as in effect on the Santa Fe, there will still be in the interim a different treatment of these two great competing transportation agencies. This of itself is a strong indictment of the present system of making the contracts. The relations between the Pullman Company and the railroads should be subject to more complete regulation by this commission. It is doubtful whether jurisdiction lies with the commission under the existing law to prescribe divisions of earnings between the Pullman Company and the railroads, and the commission should request Congress to correct any deficiencies in the law so that it may have full jurisdiction to prescribe all the terms and conditions, as between the Pullman Company and the railroads, under which the Pullman cars shall be operated.

APPENDIX

Pullman Surcharge and Rate of Return on Investment,* Class I Roads, 1923

Name of District, Region and Road	Pullman surcharge collections year ended Dec. 31, 1923	Rate of return on investment
Eastern District—New England Region:		
Atlantic & St. Lawrence.....	\$8,440	5.56
Bangor & Aroostook.....	7,266	5.56
Boston & Maine.....	292,484	1.30
Canadian Pacific (Lines in Maine).....	16,084	3.70
Central New England.....	7	3.70
Central Vermont.....	28,417	.71
Maine Central.....	102,617	3.21
New York, New Haven & Hartford.....	1,333,070	3.47
Rutland.....	47,877	3.55
Total New England Region.....	1,836,262	....
Great Lakes Region:		
Ann Arbor.....	953	2.41
Buffalo, Rochester & Pittsburgh.....	19,561	4.32
Chicago & Erie.....	17,475	1.17
Delaware & Hudson.....	97,344	5.69
Delaware, Lackawanna & Western (System).....	248,488	5.68
Detroit & Mackinac.....	5,511	2.01
Detroit, Grand Haven & Milwaukee.....	13,100	7.86
Erie.....	140,931	4.31
Grand Trunk Western.....	65,543	4.02
Lehigh Valley.....	211,090	2.91
Michigan Central.....	904,951	12.38
Monongahela.....	2,928	5.34
New Jersey & New York.....	8	....
New York Central.....	4,135,789	6.23
New York, Chicago & St. Louis.....	43,528	5.74
New York, Ontario & Western.....	23,079	1.16
Pere Marquette.....	121,709	6.02
Pittsburgh & Lake Erie.....	38,749	17.76
Ulster & Delaware.....	2,150	2.55
Wabash.....	286,672	3.97
Total, Great Lakes Region.....	6,379,559	....

*On basis of 1922 investment and net railway operating income for 1923. Investment figures for 1923 not yet available.

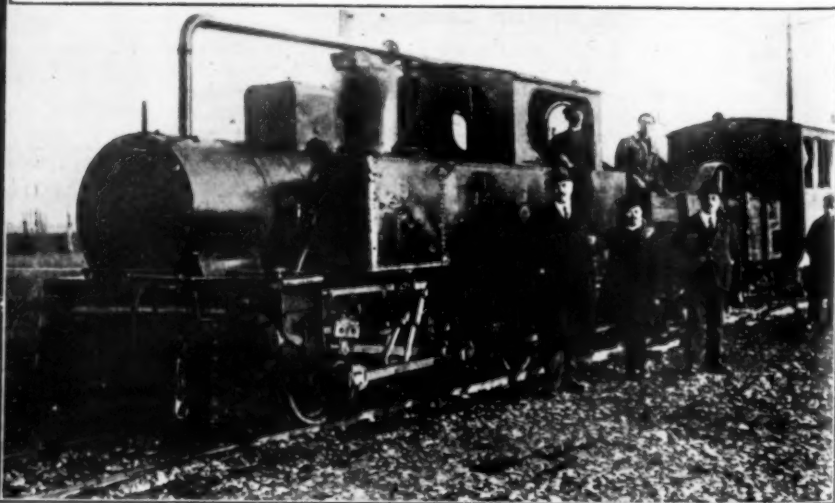
Central Eastern Region:		
Atlantic City.....	5,400	....
Baltimore & Ohio.....	906,385	5.84
Baltimore, Chesapeake & Atlantic.....	865	....
Buffalo & Susquehanna R. R. Corp.....	19	5.44
Central of New Jersey.....	57,890	2.85
Chicago & Eastern Illinois.....	191,873	4.17
Cincinnati, Indianapolis & Western.....	5,372	1.81
Chicago, Indianapolis & Louisville.....	129,528	5.32
Cleveland, Cincinnati, Chicago & St. Louis.....	712,468	6.96
Hocking Valley.....	23,106	4.47
Long Island.....	31,288	4.31
Pennsylvania.....	5,584,293	4.22
Philadelphia & Reading.....	72,500	9.86
West Jersey & Seashore.....	87,585	3.38
Western Maryland.....	2,271	3.34

Name of District, Region and Road	Pullman surcharge collections year ended Dec. 31, 1923	Rate of return on investment	Name of District, Region and Road	Pullman surcharge collections year ended Dec. 31, 1923	Rate of return on investment
Wheeling & Lake Erie.....	8,339	3.17	Chicago, Rock Island & Gulf.....	30,150	3.82
Total, Central Eastern Region.....	7,819,182	....	Chicago, Rock Island & Pacific.....	796,774	3.90
Total, Eastern District.....	16,035,003	....	Colorado & Southern.....	69,857	.92
Pocahontas Region:			Denver & Rio Grande Western.....	281,361	1.73
Chesapeake & Ohio.....	321,902	6.27	El Paso & Southwestern.....	95,761	3.13
Norfolk & Western.....	237,572	6.02	Fort Worth & Denver City.....	73,923	9.47
Richmond, Fredericksburg & Potomac.....	187,956	11.85	Los Angeles & Salt Lake.....	379,326	4.08
Virginian.....	5,266	5.02	Northwestern Pacific.....	27,955	2.03
Total, Pocahontas Region.....	752,696	....	Oregon Short Line.....	242,407	4.79
Southern Region:			Panhandle & Santa Fe.....	40,483	4.49
Alabama & Vicksburg.....	15,004	8.14	St. Joseph & Grand Island.....	2,588	.94
Alabama Great Southern.....	68,017	9.66	Southern Pacific (Pacific System).....	2,258,582	5.51
Atlanta & West Point.....	29,429	6.98	Toledo, Peoria & Western.....	2,548	....
Atlanta, Birmingham & Atlantic.....	8,671	....	Union Pacific.....	1,115,842	7.73
Atlantic Coast Line.....	736,445	7.37	Western Pacific.....	159,823	3.03
Carolina, Clinchfield & Ohio (System).....	2,486	4.16	Total Central Western Region.....	9,411,123	....
Central of Georgia.....	187,142	4.98	Southwestern Region:		
Charleston & Western Carolina.....	435	4.80	Beaumont, Sour Lake & Western.....	8,283	10.89
Cincinnati, New Orleans & Texas Pacific.....	152,891	9.05	Ft. Smith & Western.....	5,856	.53
Florida East Coast.....	262,683	5.53	Fort Worth & Rio Grande.....	12,350	....
Georgia R. R. Lessee Organization.....	35,931	8.90	Galveston, Harrisburg & San Antonio.....	277,610	2.82
Georgia & Florida.....	3,068	1.40	Gulf, Colorado & Santa Fe.....	105,510	6.59
Georgia, Southern & Florida.....	56,767	4.94	Houston & Texas Central.....	150,700	4.57
Gulf & Ship Island.....	5,563	3.62	Houston East & West Texas.....	16,255	1.86
Columbus & Greenville.....	68	.02	International-Great Northern.....	72,044	5.35
Illinois Central.....	726,935	5.65	Kansas City Southern.....	54,224	2.99
Louisville & Nashville.....	725,267	5.94	Louisiana & Arkansas.....	81	6.73
Louisville, Henderson & St. Louis.....	23,929	6.81	Louisiana Ry. & Nav.....	6,981	.58
Mississippi Central.....	52	3.27	Louisiana Ry. & Nav. of Texas.....	587	....
Mobile & Ohio.....	22,698	5.77	Louisiana Western.....	45,684	9.24
Nashville, Chattanooga & St. Louis.....	172,150	4.88	Missouri-Kansas-Texas.....	195,543	3.89
New Orleans & Northeastern.....	25,631	4.57	Missouri-Kansas-Texas of Texas.....	202,412	....
New Orleans Great Northern.....	1,446	4.24	Missouri Pacific.....	485,832	2.31
Norfolk Southern.....	15,647	3.89	Morgan's La. & Tex.....	70,291	.77
Northern Alabama.....	32	6.99	New Orleans, Texas & Mexico.....	12,060	6.46
Seaboard Air Line.....	411,900	4.01	St. Louis, Brownsville & Mexico.....	38,585	11.62
Southern.....	1,209,894	5.47	St. Louis-San Francisco.....	551,825	4.87
Tennessee Central.....	7,739	8.95	St. Louis, San Francisco & Texas.....	9,158	1.18
Western of Alabama.....	39,153	7.45	St. Louis Southwestern.....	29,052	7.94
Yazoo & Mississippi Valley.....	60,694	2.80	St. Louis Southwestern of Texas.....	14,967	....
Total, Southern Region.....	5,007,767	....	San Antonio & Aransas Pass.....	7,560	3.42
Total, Southern District (including Pocahontas Region).....	5,760,463	....	San Antonio, Uvalde & Gulf.....	11,489	2.07
Western District—Northwestern Region:			Texarkana & Ft. Smith.....	4,854	17.61
Chicago & North Western.....	912,242	3.46	Texas & New Orleans.....	56,680	....
Chicago Great Western.....	139,081	1.27	Texas & Pacific.....	270,520	4.10
Chicago, Milwaukee & St. Paul.....	761,866	2.89	Vicksburg, Shreveport & Pacific.....	16,820	6.97
Chicago, St. Paul, Minneapolis & Omaha.....	171,139	3.49	Wichita Valley.....	1,714	7.06
Duluth & Iron Range.....	376	5.75	Total, Southwestern Region.....	2,735,527	....
Duluth, Missabe & Northern.....	798	22.76	Total Western District.....	15,695,403	....
Duluth, South Shore & Atlantic.....	23,368	1.25	Total United States.....	37,490,869	....
Duluth, Winnipeg & Pacific.....	4,004	.60			
Great Northern.....	401,121	5.56			
Minneapolis & St. Louis.....	13,790	1.26			
Minneapolis, St. Paul & Sault Ste. Marie.....	242,917	3.94			
Northern Pacific.....	582,457	3.19			
Oregon-Washington R. R. & Nav. Co.....	239,140	.64			
Spokane, International.....	2,843	2.35			
Spokane, Portland & Seattle Ry.....	53,611	3.04			
Total, Northwestern Region.....	3,548,753	....		
Central Western Region:					
Arizona Eastern.....	5,400	4.40			
Atchison, Topeka & Santa Fe.....	2,660,740	5.62			
Chicago & Alton.....	249,245	3.67			
Chicago, Burlington & Quincy.....	918,358	4.74			

Chairman Smith of the Senate committee on interstate commerce had a copy of the tentative report published in the Congressional Record of May 3 and offered it in explanation as to why the committee had taken no action with reference to the numerous bills which have been introduced to abolish the surcharge. He also called attention to the suggestion that the commission may ask for legislation to authorize it to deal with Pullman contracts.



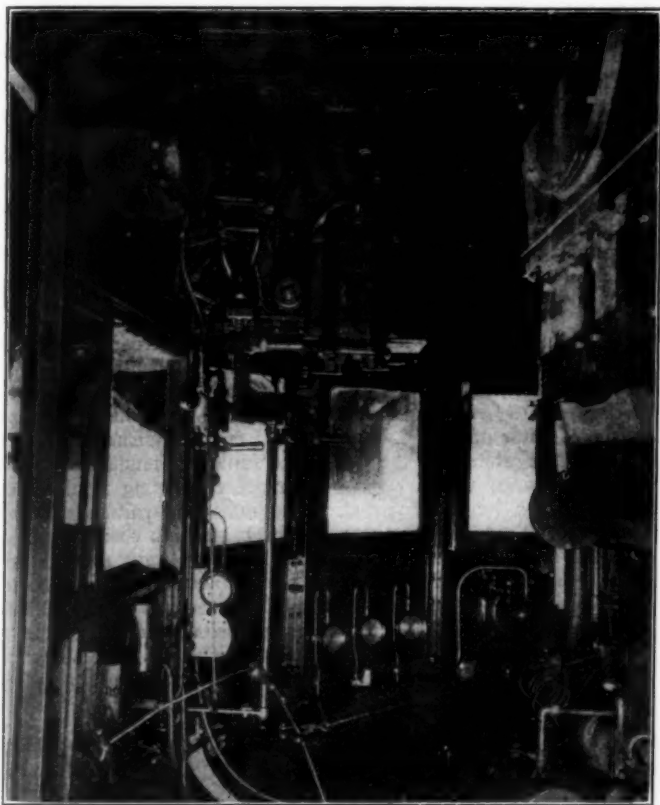
Demonstration of the Zarlatti Internal Combustion Motor-Driven Compressed Air and Steam Locomotive—The Locomotive is Run by Compressed Air Combined with Steam Generated by Waste Heat from the Motor



Oil-Electric Locomotive with Injection Type Engine

AN ELECTRIC locomotive, driven by a fuel-oil engine, the first of its kind built in America, has been built jointly by the General Electric Company and the Ingersoll-Rand Company. This has been especially designed for switching service and will be given its first practical test by the New York Central in its freight yards on the west side, New York City.

The power plant equipment consists of a 300-hp. oil en-



Interior of the Cab, Showing the Throttle and Controller—the Oil Engine Is at the Left

gine, manufactured by the Ingersoll-Rand Company, directly connected to a 200-kw. General Electric generator. The direct motive power consists of four HM-840 General Electric motors, one of which is geared to each of the four axles. The locomotive has a total weight of 60 tons, all on the drivers.

During the last 15 years the General Electric Company has had considerable experience in the construction of self-propelled motor cars and locomotives using gasoline as fuel. About 90 equipments have been put in service during this period and most of them are still operating. In order to take advantage of a low-priced fuel in the internal combustion engine, an arrangement was made with the Ingersoll-Rand Company to build an engine designed for the use of fuel oil and having the characteristics of speed and weight that would be suitable for its use in a locomotive. The complete locomotive is, therefore, a combination of pieces of apparatus, each of which has been well tried out and whose combination promises to result in a high degree of fuel economy. The locomotive has been in use in the yards of the Ingersoll-Rand factory at Phillipsburg, N. J., for about four months.

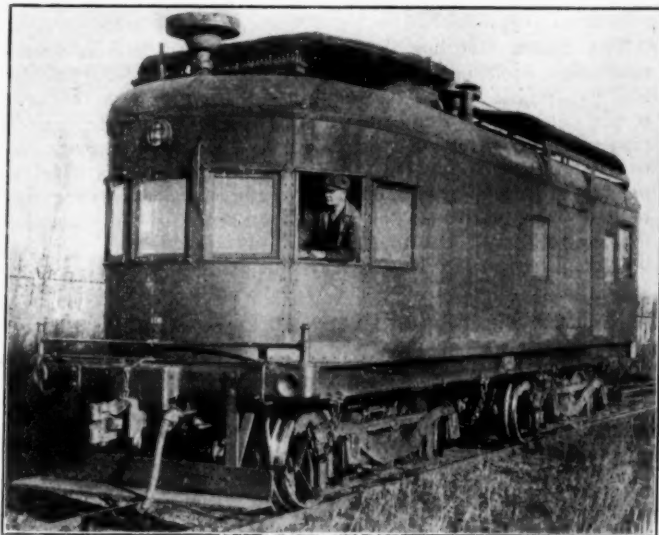
The six-cylinder engine is designed to burn fuel oil according to the principles of the well-known Price system of direct

fuel injection. This system avoids the use of high pressure injection and also effects a reduction in weight, an improvement in mechanical efficiency and increased simplicity and reliability. The fuel is injected into the various cylinders through a distributor by means of a single acting plunger type pump. The lubricating system is of the continuous filtration type, by means of which the oil is passed from a crank case through an oil filter before returning to the system again.

All parts of the cylinders, cylinder heads and combustion chambers are water cooled. The water from the water jackets passes to a radiator located on the roof and a thermostat maintains an even temperature irrespective of weather conditions. The muffler for reducing the noise of the exhaust is also mounted on the roof. Sufficient fuel can be carried for 48 hours continuous switching service.

The engine consumes about 0.43 lb. of fuel oil per brake horsepower. Owing to its high economy it is free from smoke, which renders it particularly suitable for service in cities or in places where smoke is objectionable. As ordinarily used in switching service, the locomotive has consumed about 20 to 26 cents worth of fuel oil per hour.

The unusual feature of the design of this locomotive is the use of a direct current generator supplying current to the motors without intervening accelerating resistances. This is accomplished by using a differential series field on the exciter, which automatically reduces the generator voltage with the increase in the amount of current drawn by the motors. The speed of the locomotive, therefore, automatically increases as the load is reduced, corresponding to the rise in impressed voltage. This control completely eliminates the



Front End View of the Oil-Electric Locomotive Built Jointly by the General Electric Company and Ingersoll-Rand Company

possibility of overloading the generator or motors or of stalling the engine. The main excitation of the exciter field is furnished by a storage battery which also supplies control current and locomotive lights.

A RESOLUTION has been introduced in Congress by Representative Huddleston, of Alabama, directing the committee on interstate and foreign commerce to investigate the transaction by which the Interstate Commerce Commission granted a certificate of public convenience and necessity and also authorized a bond issue for the construction of a new passenger terminal at Cleveland, Ohio, including "the failure of the Interstate Commerce Commission to protect the interests of the public and the shareholders of the railroads involved and its reversal of its original decision in said matter."

General News Department

The Chicago, Milwaukee & St. Paul has moved its general offices in Chicago from the Railway Exchange building to the new Union Station.

The Western Railway Club will hold its annual meeting and dinner at the Edgewater Beach Hotel, Chicago, on Friday evening, May 23. Fred W. Sargent, vice-president and general counsel of the Chicago & North Western, will be the speaker.

The Interstate Commerce Commission has announced a series of hearings before examiners during June and July on the reports as to excess earnings under the recapture clause of the transportation act filed by the Dayton-Goose Creek, Indiana Northern, Buffalo & Susquehanna, Cornwall, Genesee & Wyoming, Lehigh & New England and the Ligonier Valley.

Of the \$50,000,000 loaned to the Canadian National last February by the Dominion Government \$15,184,000 is unused and is held in trust by the Minister of Finance, it was stated in the House of Commons in answer to a question. This balance will be applied to the payment of capital obligations. It was also stated that last year the ten hotels operated in Canada by the Canadian National Railways showed a total deficit of \$175,475. Only the Grand Beach Hotel (Manitoba), the Chateau Laurier at Ottawa and the Prince Arthur in Port Arthur, Ont., showed a profit.

The South Carolina Railroad Commission has adopted a resolution declaring that the Charleston & Western Carolina Railway ought not to be required to comply with the order of the Interstate Commerce Commission requiring the installation of automatic train control on its line from Augusta, Ga., to Port Royal, S. C., 113 miles. The road operates only two passenger trains a day each way and usually three freight trains a day each way. The expenditure of the necessary money to install automatic apparatus would very seriously burden the road's ability to serve the public efficiently.

May Meeting of New York Railroad Club

At the monthly meeting of the New York Railroad Club to be held on May 16 at the United Engineering Societies' Building, 29 West Thirty-ninth street, New York, Robert S. Binkerd, vice-chairman of the committee on public relations of the Eastern Presidents' Conference, will speak on "Where Is Public Relations Work Getting Us?" Members will have the usual "dutch treat" dinner preceding the meeting at the Hotel Commodore.

The club will hold an outing on July 10.

Mississippi Stop Law

A law requiring automobiles to be stopped before crossing over a railroad at grade is now in force in Mississippi. Laws of this nature, though not in all respects uniform, are now on the statute books of four adjacent states, Virginia, North Carolina, Tennessee and Mississippi. The Mississippi law makes violation of its provisions a misdemeanor, punishable by fine or imprisonment. All railroads in the state are required to put up signs on the highway 50 ft. from the track, reading "Mississippi Law, Stop."

According to a press dispatch, violators of the law to the number of 75 were arrested at Jackson on May 4, three days after the statute became effective; and some of them were fined as much as fifty dollars.

Progress on the Moffat Tunnel

The pioneer or water tunnel at the east end of the Moffat tunnel which is now being driven through the Continental divide on the line of the Denver & Salt Lake in Colorado had, on April 10, been driven in 2,100 ft. from the east portal and 2,340 ft. from the west portal. The main heading of the railroad tunnel has been driven

1,450 ft. and the full section 135 ft. from the east portal, while at the west portal 680 ft. of main and top headings have been excavated. A total of 500 men are now being employed, in three shifts, working on seven headings.

Virginian Wants I. C. C. Approval of Train Control Before Installation

The Virginian Railway has filed with the Interstate Commerce Commission a petition asking that it be not required to make an installation of automatic train control, saying that if the commission's orders are to be construed as requiring carriers to select and install at their own risk a system of automatic train control without approval by the commission of the system, plan or design until the completion of the work by the carrier it "respectfully protests against being compelled to assume such risk."

The Automatic Train Control Situation

Franklin Snow, who has interviewed many railroad officers and other persons on the subject of automatic train-control, and some of whose articles in the Christian Science Monitor were noticed in the *Railway Age* of April 26, page 1057, gives his conclusions in the Monitor of May 6. To equip 141 engine divisions, would, in the present state of the art, be "futile." Standardization to make apparatus usable on two or more connecting roads is declared to be highly essential. He thinks the railroads unduly disturbed by unreliable estimates of probable high cost, but admits that the lowest reliable estimates call for very heavy expenditures. The demand of the railroads that the automatic apparatus be left (under suitable restrictions) within the control of the engineman is declared to be a vital issue; as is, also, the demand that no system or method be ordered or used which cannot be suspended whenever conditions are such that an accidental or unnecessary stop is likely to cause serious and costly blockades.

Change in New York Rapid Transit Law

By a law which was approved by the Governor on May 2, the State of New York has placed the authority for constructing, equipping and operating new rapid transit railways in New York City in the hands of the city government; and employees of the Rapid Transit Commission, engaged in this department, will be transferred and become employees of the city. The law covers the work now unfinished on all subway and elevated lines. The authority to engage in operation is limited to new lines; it is not mandatory; but if the city does engage in operation, it must for the first three years charge a five cent fare; but thereafter the fares must be made sufficient to pay operating expenses, maintenance, interest and amortization, and to provide a reserve for depreciation. The Mayor is to appoint a Board of Transportation of three members.

The Transit Commission is continued and retains the power of supervision over existing rapid transit lines; also power to act under the law of 1921 authorizing this commission to adopt a plan of readjustment of existing lines of transportation within the city.

The Hudson Bay Railway

The capital expenditure to March 31, 1923, on the Hudson Bay Railway was \$14,459,941. The sum of \$6,250,000 is the estimated cost of finishing the road, exclusive of terminals or harbor developments. This information was given in the House of Commons at Ottawa. There is no specific authority under the Dominion Lands Act for the sale of land for the purpose of the Hudson Bay line construction, but pre-emptions and purchased homesteads were sold under the provisions of that Act. The net amount collected on pre-emption sales up to March 31, 1924, was \$15,984,134 and from purchased homesteads \$3,146,421, or a total of \$19,130,556.

Sir Henry Thornton, president of the Canadian National Railways, while in Winnipeg last week, told a deputation from the "On to the Bay" Association that he intended this summer to secure first hand information on the Hudson Bay Railway through a personal trip of inspection, which would take him to the end of steel and to the Bay itself. Sir Henry stated that if the Dominion government would vote the money for completing the road he was quite willing to go through with it. He had found it very difficult to get the actual facts with regard to the line, as both supporters and opponents were very enthusiastic in presenting their case.

C. P. R. Has Successful First Quarter

At the end of March the Canadian Pacific brought to a close the most successful first quarterly period since 1918. Substantial gains in gross and net earnings in January and February were followed up by another in March which made the best showing of any March in the past five years. While the weekly traffic reports indicate that there will be a decline in both gross and net earnings for April, the showing of the road for the three months ending March 31 is regarded as highly satisfactory with an increase of over \$1,250,000 in net earnings over the same period in 1923. Following are the gross earnings, operating expenses and net for March and for the first quarter, with comparisons:

March	1924	1923	Inc.
Gross earnings	\$14,812,927	\$13,585,762	\$1,227,165
Work ex.	12,302,128	11,606,049	696,079
Net profit	\$2,510,798	\$1,979,713	\$531,085
First quarter	1924	1923	Inc.
Gross earnings	\$41,288,482	\$37,894,541	\$3,393,941
Work ex.	36,839,434	34,699,308	2,140,126
Net profit	\$4,449,048	\$3,195,233	\$1,253,814

A "Life Extension Institute" on the P. R. R.

To encourage the preservation of health and increase the average length of life among its 211,000 employees the Pennsylvania Railroad has issued a general notice urging every individual to undergo a complete examination as to physical condition, at least once a year, and at the company's expense. The Voluntary Relief Department will assign one of its physicians, on request, to make examinations without cost. The examinations may be made at any time, but it is suggested that on or about the birthday of each worker would be an appropriate occasion. The instructions say in part:

"Why is the value of health not recognized when we have it and when we could keep it with so little effort? . . . The human machine—worth infinitely more than any inanimate machine—is oftentimes allowed to go years and years without being examined. In the inanimate machine any worn out parts may be replaced at comparatively little cost, but no amount of money or

time can replace the worn out parts of the human machine. No matter how robust and vigorous a person may seem to be, he should be examined from time to time in order to detect any minor defects and thus prevent the possibility of some stealthy and insidious disease gaining a foothold. . . . It is of the utmost importance to know the warning signs of disease and to have prompt advice and attention. Eternal vigilance is the price of safety—and without health there can be no safety.

The new provisions are entirely apart from the regulations requiring certain train service employees and others to undergo periodical tests of sight, hearing, etc., to insure fitness for their duties.

Railway Earnings for March

The Class I railroads had total operating revenues of \$505,124,921 in March, according to reports compiled by the Bureau of Railway Economics. This was a decrease of \$30,701,470 or 5.7 per cent as compared with the same month last year. Operating expenses totaled \$390,273,909, a decrease of \$27,653,080 or 6.6 per cent, and the net operating income amounted to \$80,239,885, as compared with \$84,124,312 in March last year. In February, 1924, the net operating income was \$71,191,664.

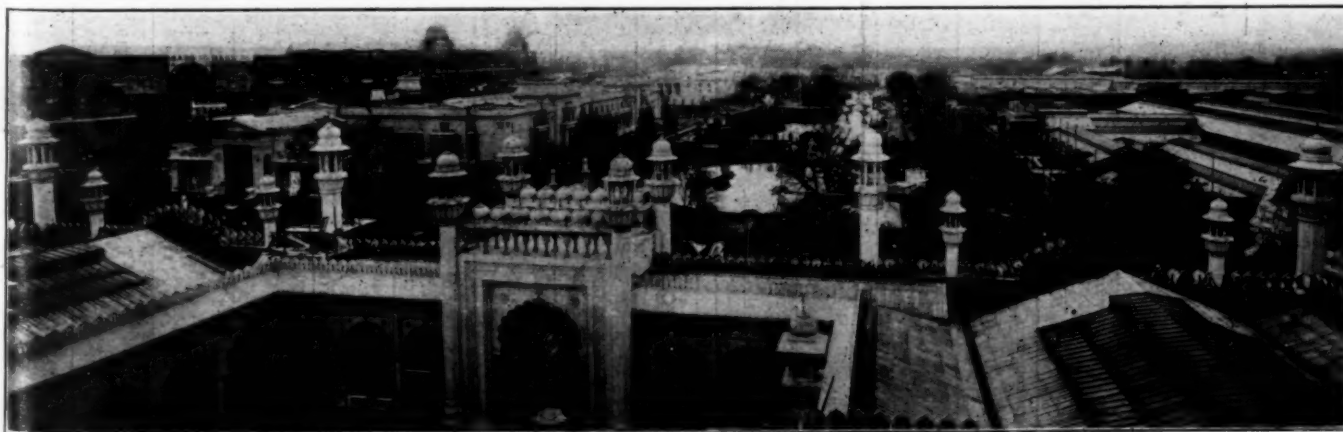
For the first three months this year, the Class I railroads had a net operating income of \$202,776,047 which was at the annual rate of return of 4.61 per cent on their property investment, as compared with \$184,603,374 for the same period in 1923, or 4.56 per cent. The rate of return was 5.28 per cent in the Eastern district, 5.60 per cent in the Southern district, and 3.57 per cent in the Western district. The net operating income by sub-districts for the first three months and the percentage of return on property investment, on an annual basis, in each district were as follows:

		Per Cent
New England Region.....	\$7,980,526	5.16
Great Lakes Region.....	39,682,741	5.76
Central Eastern Region.....	39,922,842	4.83
Pocahontas Region	10,836,735	5.58
Southern Region	38,643,399	5.60
Northwestern Region	14,627,059	2.56
Centralwestern Region	34,829,566	4.19
Southwestern Region	16,253,179	3.70

For United States as a whole..... \$202,776,047 4.61

Thirty-four carriers operated at a loss in March, of which 11 were in the Eastern district and 23 in the Western district. In February, 30 roads had operating deficits.

The railroads in the Eastern district had a net operating income in March of \$40,886,984, as compared with a net operating income in March last year of \$44,632,054. Carriers in the Southern district in March had a net operating income of \$14,477,947, compared with \$14,525,895 in March last year. Carriers in the Western district had a net operating income in March of \$24,874,954, compared with \$24,966,363 for the same month last year.



British Empire Exhibition at Wembley, Canadian Pacific Building at the Left

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1924

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net operating income.	Net operating income 1923.
		Freight.	Passenger.	Total.	Way and structures.	Maintenance of equip-ment.	Traffic.					
Alton, Canton & Youngstown.....	170	\$244,937	\$667	\$245,604	\$30,241	\$21,417	\$9,754	55.30	\$113,912	\$101,453	\$12,459	\$49,593
Albany & Vicksburg.....	170	672,004	2,195	674,199	201,793	65,869	205,662	57.30	299,469	257,976	41,493	129,973
Albany & Vicksburg.....	141	216,068	60,319	276,387	52,622	57,756	100,378	79.50	60,730	37,609	23,121	34,876
Albany & Vicksburg.....	141	616,894	185,155	802,049	167,298	159,348	280,646	82.50	150,213	84,291	65,922	144,917
Vicksburg, Shreveport & Pacific.....	188	246,101	87,959	334,060	61,991	76,659	10,997	82.10	64,007	45,610	18,397	71,019
Ann Arbor.....	188	698,237	270,185	968,422	191,242	233,655	35,636	84.50	161,273	103,870	57,403	182,023
Ann Arbor.....	293	447,108	41,919	489,027	36,331	109,485	8,725	74.80	128,037	106,727	21,310	72,295
Ann Arbor.....	293	1,184,333	119,575	1,303,908	177,496	277,496	26,832	81.00	256,356	192,560	63,796	151,486
Atchafalaya, Topeka & Santa Fe.....	8,997	9,846,313	3,561,156	13,407,469	2,042,368	3,862,039	302,362	78.70	3,115,011	2,256,241	858,770	4,107,772
Atchafalaya, Topeka & Santa Fe.....	9,000	28,220,706	11,260,742	39,481,448	5,522,319	11,974,752	918,443	78.20	9,511,851	6,307,393	3,204,458	10,975,036
Atchafalaya, Topeka & Santa Fe.....	1,908	1,457,591	116,885	1,574,476	1,094,304	584,344	46,317	99.40	11,451	73,976	62,525	46,515
Atchafalaya, Topeka & Santa Fe.....	1,908	4,762,116	956,899	5,719,015	1,379,203	1,694,231	139,104	89.70	630,198	374,062	256,136	319,143
Panhandle & Santa Fe.....	858	545,716	113,269	658,985	151,879	210,517	7,595	89.50	73,692	49,022	24,670	30,418
Panhandle & Santa Fe.....	858	1,783,779	363,928	2,147,707	331,925	626,191	22,934	75.20	562,723	486,343	76,380	133,094
Panhandle & Santa Fe.....	93	143,699	70,610	214,309	30,929	35,117	8,864	72.80	66,823	49,321	17,502	45,948
Panhandle & Santa Fe.....	93	424,926	225,900	650,826	96,197	127,612	24,605	75.00	185,409	143,211	42,198	98,698
Western of Alabama.....	133	175,947	64,652	240,599	38,274	41,295	9,507	70.60	78,895	61,384	17,511	54,711
Atlanta, Birmingham & Atlantic.....	133	500,477	214,637	715,114	104,332	148,345	28,440	72.10	221,925	180,124	41,801	134,627
Atlanta, Birmingham & Atlantic.....	639	355,896	40,810	396,706	71,337	89,324	17,129	87.05	56,092	43,117	12,975	27,460
Atlanta, Birmingham & Atlantic.....	639	989,288	124,526	1,113,814	210,734	256,275	65,302	91.31	104,702	66,312	38,390	85,580
Atlantic Coast Line.....	4,865	5,698,688	1,908,812	7,607,500	876,447	1,411,313	129,896	65.40	2,868,701	2,418,606	450,095	2,538,339
Atlantic Coast Line.....	4,863	15,961,769	6,109,292	22,071,061	2,447,152	4,229,622	389,193	65.40	8,259,609	7,004,955	1,254,654	6,433,025
Atlantic Coast Line.....	342	335,552	28,776	364,328	65,509	47,985	7,254	79.10	100,898	83,294	17,604	108,520
Atlantic Coast Line.....	342	864,576	94,283	958,859	187,781	139,519	21,586	79.10	209,715	156,999	52,716	226,808
Baltimore & Ohio.....	5,303	16,175,591	2,301,363	18,476,954	2,509,772	4,509,907	393,379	79.70	3,985,711	3,119,691	866,020	4,381,004
Baltimore & Ohio.....	5,303	46,369,175	6,823,796	53,192,971	7,501,366	13,442,622	1,093,219	82.80	9,722,099	7,114,449	2,607,650	10,512,656
Baltimore & Ohio.....	80	.....	.....	.....	53,635	46,385	1,829	98.80	303,540	26,939	266,601	35,446
Baltimore & Ohio.....	80	.....	.....	.....	116,236	148,785	5,704	100.30	3,097	114,447	22,006	123,902
Staten Island Rapid Transit.....	23	98,685	95,284	193,969	27,210	31,321	1,986	93.10	14,763	303	14,460	58,175
Bangor & Arcata.....	23	281,164	276,525	557,689	76,843	97,540	6,353	96.00	24,169	25,121	64,747	169,005
Bangor & Arcata.....	616	724,177	86,308	810,485	100,690	141,632	19,089	56.10	365,880	297,762	68,118	157,484
Bangor & Arcata.....	616	1,889,659	224,290	2,113,949	319,086	433,404	11,113	65.20	757,482	596,692	160,790	271,920
Belt Ry. Co. of Chicago.....	32	.....	.....	.....	40,866	61,264	2,390	68.60	188,536	152,957	35,579	111,700
Belt Ry. Co. of Chicago.....	32	.....	.....	.....	109,247	210,093	7,118	68.60	475,224	361,366	113,858	435,746
Belt Ry. Co. of Chicago.....	228	776,241	27,834	804,075	67,964	478,234	14,662	106.70	880,525	97,675	782,850	509,431
Belt Ry. Co. of Chicago.....	228	2,246,716	77,664	2,324,380	198,895	1,436,188	44,546	111.10	264,678	392,300	127,622	1,291,410
Bingham & Garfield.....	34	36,835	1	36,836	7,426	4,471	956	73.60	10,219	275	9,944	16,717
Bingham & Garfield.....	34	107,471	1	107,472	17,145	21,477	4,703	79.30	23,160	7,812	15,348	47,991
Bingham & Garfield.....	2,287	4,280,673	1,796,688	6,077,361	796,434	1,360,345	56,869	80.60	1,330,236	1,105,102	225,134	855,569
Bingham & Garfield.....	2,287	11,848,366	5,355,167	17,203,533	2,407,848	4,128,385	163,958	85.10	2,897,420	2,193,801	703,619	1,503,568
Brooklyn Eastern District Terminal.....	9	125,956	.....	125,956	7,591	13,324	111	56.90	57,368	48,466	9,902	74,606
Buffalo & Susquehanna R. R. Corp.....	253	344,381	6,945	351,326	30,357	33,342	780	58.30	153,540	131,834	21,706	186,791
Buffalo & Susquehanna R. R. Corp.....	253	161,292	.....	161,292	33,432	77,889	2,125	105.90	10,110	15,460	18,571	105,741
Buffalo & Susquehanna R. R. Corp.....	253	568,439	18,015	586,454	101,089	249,387	5,990	96.90	18,463	5,991	12,472	265,087
Buffalo, Rochester & Pittsburgh.....	591	1,299,998	146,978	1,446,976	161,298	602,055	24,333	97.60	36,575	1,350	36,225	387,322
Buffalo, Rochester & Pittsburgh.....	591	3,862,104	427,529	4,289,633	509,994	1,675,913	129,451	95.10	1,842,432	1,234,404	608,028	1,129,882
Buffalo, Rochester & Pittsburgh.....	591	286,430	50,779	337,209	33,165	65,323	3,988	64.30	127,189	116,189	11,000	94,114
Buffalo, Rochester & Pittsburgh.....	591	809,984	121,810	931,794	73,237	180,314	13,440	69.60	299,606	266,606	33,000	41,501
Canadian Pacific Lines in Maine.....	309	695,855	41,184	737,039	87,280	187,989	25,246	70.20	223,799	173,701	50,098	262,839
Carolina, Clinchfield & Ohio.....	309	1,984,160	118,027	2,102,187	232,177	543,267	77,928	72.00	600,777	450,651	150,126	610,769
Central of Georgia.....	1,920	1,794,817	423,528	2,218,345	349,821	384,143	68,008	71.90	701,744	570,225	131,519	519,145
Central of Georgia.....	1,920	4,772,442	1,431,553	6,203,995	948,055	1,166,333	209,891	76.20	1,623,313	1,281,498	341,815	1,246,583
Central of New Jersey.....	691	3,773,813	676,117	4,449,930	400,306	1,318,229	34,239	79.40	977,972	648,074	329,898	354,986
Central of New Jersey.....	691	10,442,093	2,021,739	12,463,832	1,428,183	3,974,124	108,135	86.70	1,769,080	1,338,620	430,460	880,920
Central of New Jersey.....	691	625,000	101,750	726,750	74,953	102,852	11,588	83.20	701,744	570,225	131,519	519,145
Central of New Jersey.....	691	1,611,200	308,805	1,919,995	280,053	344,465	33,805	85.60	303,472	246,786	56,686	83,445
Chesapeake & Ohio.....	2,558	7,602,482	859,566	8,462,048	846,492	2,265,945	99,510	77.20	2,019,285	1,642,960	376,325	1,394,568
Chesapeake & Ohio.....	2,558	21,829,344	2,484,184	24,313,528	2,509,558	6,448,686	603,596	77.20	5,704,517	4,667,254	1,037,263	3,829,221
Chesapeake & Ohio.....	1,050	1,765,733	523,485	2,289,218	232,326	309,558	52,136	71.60	717,254	623,855	93,399	49,147
Chicago & Alton.....	1,050	5,243,607	1,551,022	6,794,629	735,267	1,946,529	173,886	77.60	1,688,846	1,416,530	272,316	1,058,901

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road	Average mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Operating income (or loss)	Net operating income	Net income 1922
		Freight	Passenger	Total (inc. misc.)	Way and structures	Traffic	Transportation					
Chicago & Eastern Illinois.....	945	\$1,653,783	\$399,977	\$2,053,760	\$220,230	\$51,184	\$961,737	92.10	\$176,602	\$76,184	\$42,033	\$417,418
Chicago & North Western.....	945	5,472,860	1,211,346	6,684,206	720,800	149,417	3,013,873	87.50	902,193	589,835	492,164	1,077,820
Chicago & North Western.....	8462	8,584,895	2,482,308	11,067,203	1,161,489	162,910	5,776,814	79.20	2,575,386	1,815,351	1,607,942	1,970,449
Chicago & North Western.....	8462	24,673,627	7,397,577	32,071,204	3,483,665	468,395	16,511,045	81.70	6,561,714	4,278,989	3,513,163	1,990,333
Chicago, Burlington & Quincy.....	9405	9,715,400	2,165,570	11,880,970	1,114,545	234,062	4,845,785	70.40	3,927,384	3,038,529	2,731,868	2,378,718
Chicago Great Western.....	9405	29,415,307	6,420,434	35,835,741	3,219,615	710,043	15,455,996	75.70	9,624,138	7,046,244	6,230,131	6,860,421
Chicago Great Western.....	1496	1,546,715	342,951	1,889,666	194,668	64,364	877,980	80.10	408,319	335,047	224,622	190,126
Chicago Great Western.....	1496	4,354,449	1,037,222	5,391,671	542,274	189,958	2,722,364	83.60	960,735	726,339	438,379	460,461
Chicago, Indianapolis & Louisville.....	654	1,095,767	246,901	1,342,668	141,378	34,236	547,671	72.90	402,222	324,483	199,579	239,129
Chicago, Indianapolis & Louisville.....	654	3,177,185	698,660	3,875,845	426,128	99,384	1,623,037	75.00	1,065,842	862,241	495,569	506,994
Chicago, Milwaukee & St. Paul.....	10986	9,934,164	1,896,232	11,830,396	1,329,544	203,599	5,366,977	79.70	2,656,582	1,851,506	1,466,951	1,548,299
Chicago, Milwaukee & St. Paul.....	10986	28,790,467	5,627,306	34,417,773	3,883,515	557,666	16,519,780	81.80	5,980,406	4,603,922	3,467,486	3,972,465
Chicago, Peoria & St. Louis.....	247	84,210	17,491	101,701	11,913	1,823	57,459	95.24	5,380	1,863	—18,828	—25,425
Chicago, Peoria & St. Louis.....	247	252,910	47,031	300,000	45,351	5,713	181,479	95.80	13,895	3,351	—61,444	—94,861
Chicago River & Indiana.....	19	.....	.....	.....	64,651	765	251,457	62.70	234,899	194,971	287,007	299,340
Chicago River & Indiana.....	19	.....	.....	.....	1,880,071	2,636	772,452	62.30	708,476	576,767	877,978	842,099
Chicago, Rock Island & Pacific.....	7635	7,157,252	2,116,768	9,274,020	1,090,801	191,379	4,168,139	79.80	2,017,352	1,497,770	1,164,168	714,036
Chicago, Rock Island & Pacific.....	7635	20,688,663	6,268,226	26,956,889	2,897,372	579,374	12,786,087	79.90	5,845,611	4,287,461	3,109,336	1,045,146
Chicago, Rock Island & Pacific.....	7635	46,061	366,061	412,122	43,057	13,624	197,553	69.50	144,653	131,986	106,109	—12,660
Chicago, Rock Island & Pacific.....	461	1,127,848	237,384	1,365,232	159,359	39,642	606,506	71.30	425,646	387,834	296,228	7,882
Chicago, St. Paul, Minn. & Omaha.....	1749	1,753,339	529,672	2,283,011	199,818	35,354	1,038,062	74.00	639,847	507,720	416,797	195,188
Chicago, St. Paul, Minn. & Omaha.....	1749	4,960,205	1,548,720	6,508,925	591,775	106,411	3,234,334	79.50	1,438,030	1,054,990	829,803	580,982
Cincinnati, Indianapolis & Western.....	347	307,597	31,892	339,489	43,072	13,896	151,865	87.60	44,694	27,114	16,984	32,081
Cincinnati, Indianapolis & Western.....	347	928,290	93,947	1,022,237	101,403	39,009	465,171	83.40	181,175	123,057	78,504	46,266
Colorado & Southern.....	1099	815,337	120,662	935,999	101,848	12,343	417,244	81.60	187,414	124,655	116,517	10,840
Colorado & Southern.....	1099	2,527,087	393,516	2,920,603	290,542	38,027	1,276,930	89.70	380,364	391,700	365,809	35,913
Colorado & Southern.....	1099	5,584,548	1,479,229	7,063,777	596,922	134,593	3,432,991	74.00	193,534	152,368	164,325	183,693
Colorado & Southern.....	456	1,855,458	457,842	2,313,300	243,656	36,565	790,526	68.00	777,894	655,853	711,050	496,119
Wichita Valley.....	271	112,499	24,053	136,552	25,104	125	45,882	63.40	52,948	45,501	26,148	19,060
Wichita Valley.....	271	399,858	74,485	474,343	75,038	163	147,607	73.20	23,625	210,013	149,027	36,720
Wichita Valley.....	271	91,944	27,287	119,231	126,255	2,917	46,623	56.00	29,512	28,007	17,838	3,834
Wichita Valley.....	167	273,118	86,346	359,464	382,469	8,457	141,402	80.80	73,289	68,783	38,097	27,282
Delaware & Hudson.....	894	3,454,278	275,340	3,729,618	3,933,558	44,353	1,589,358	87.40	497,427	394,727	415,248	211,470
Delaware & Hudson.....	894	9,735,276	852,722	10,588,000	1,437,392	133,584	4,702,318	89.70	1,145,269	835,998	944,501	—508,631
Delaware & Hudson.....	894	15,668,572	3,108,189	18,776,761	2,599,777	118,480	3,129,943	75.50	1,810,117	1,254,671	1,354,157	908,716
Delaware & Hudson.....	992	1,568,572	313,098	1,881,670	1,685,483	355,100	9,119,910	78.50	4,543,934	3,010,742	3,218,638	1,247,875
Denver & Rio Grande Western.....	2598	1,808,474	353,254	2,161,728	257,526	49,458	821,884	81.70	431,079	263,269	348,426	164,694
Denver & Rio Grande Western.....	2598	5,556,890	1,059,058	6,615,948	717,957	148,184	2,664,495	83.70	1,172,479	667,588	831,803	213,417
Denver & Rio Grande Western.....	255	130,664	19,889	150,553	40,029	978	63,489	121.30	36,463	—45,470	—33,648	—61,606
Denver & Rio Grande Western.....	255	464,687	57,551	522,238	110,373	3,131	221,835	110.70	—62,931	—89,938	—64,934	—126,870
Detroit & Mackinac.....	375	128,791	32,476	161,267	17,780	1,786	61,299	70.20	51,728	42,164	55,361	16,043
Detroit & Mackinac.....	375	301,796	90,756	392,552	58,701	5,773	187,387	88.40	49,667	20,812	55,599	—1,021
Detroit & Mackinac.....	61	369,351	.....	369,351	21,067	3,004	121,143	50.40	185,216	159,491	48,688	98,692
Detroit & Mackinac.....	61	1,027,213	.....	1,027,213	81,094	9,311	342,133	53.70	480,906	405,183	119,343	219,282
Detroit, Toledo & Ironton.....	468	1,141,816	8,615	1,150,431	128,894	6,836	316,045	55.70	515,661	492,719	347,183	181,822
Detroit, Toledo & Ironton.....	468	3,051,585	25,402	3,076,987	293,080	23,443	908,510	56.40	1,356,945	1,302,552	919,318	290,732
Detroit, Toledo & Ironton.....	280	144,216	17,218	161,434	64,842	989	129,161	202.30	187,575	198,832	201,178	—185,269
Detroit, Toledo & Ironton.....	280	421,168	54,614	475,782	179,892	3,120	430,041	203.90	—559,264	—591,706	—710,798	—546,942
Duluth, Missabe & Northern.....	305	117,533	11,895	129,428	123,303	3,073	151,319	359.00	—382,899	—495,449	500,592	—425,099
Duluth, Missabe & Northern.....	305	317,595	40,576	358,171	396,184	9,226	439,071	383.20	—1,482,181	—1,482,181	—1,485,983	—1,266,556
Duluth, Missabe & Northern.....	591	361,523	97,031	458,554	54,846	6,702	233,245	81.60	89,639	59,639	23,372	—11,708
Duluth, Missabe & Northern.....	591	985,470	304,402	1,289,872	160,936	17,880	673,433	83.10	234,510	148,429	63,049	—38,955
Duluth, Winnipeg & Pacific.....	178	214,513	24,327	238,840	29,620	2,964	87,254	63.50	89,654	77,798	87,492	48,895
Duluth, Winnipeg & Pacific.....	178	617,737	71,955	689,692	70,719	8,823	270,029	63.80	222,101	186,989	191,836	111,960
Duluth, Winnipeg & Pacific.....	459	2,025,797	31,523	2,057,320	157,719	11,842	777,056	64.70	787,659	705,637	488,708	513,337
Duluth, Winnipeg & Pacific.....	459	5,767,223	104	5,767,327	453,344	37,448	2,258,758	69.80	1,925,816	1,679,851	1,077,845	1,462,511
El Paso & Southwestern.....	1,139	878,773	164,724	1,043,497	178,428	33,842	294,515	71.60	312,527	229,784	182,903	113,372
El Paso & Southwestern.....	1,139	2,371,511	603,652	2,975,163	313,287	113,248	872,016	75.50	768,823	521,076	430,128	456,441
El Paso & Southwestern.....	2,055	7,380,937	1,023,970	8,404,907	1,046,794	7,903,695	3,643,871	86.40	1,248,983	902,761	1,144,731	1,611,740
El Paso & Southwestern.....	2,055	20,972,175	3,058,555	24,030,730	2,837,068	451,783	10,678,481	86.10	3,635,872	2,588,363	3,284,006	2,688,344

* Includes 595.42 which should have been included in January, 1924, figures.

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues—Total			Operating expenses—			Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net operating income.	Net income 1923.
		Freight.	Passenger.	(inc. misc.)	Maintenance of way and structures.	Equip. ment.	Traffic.						
Chicago & Erie.....	269	\$1,110,049	\$56,906	\$1,251,354	\$102,566	\$184,944	\$24,750	\$452,349	64.40	\$445,562	\$392,836	\$89,771	\$1,858
Chicago & Erie.....	3 mos.	3,225,947	165,251	3,677,156	314,254	514,624	68,227	1,332,080	63.76	1,333,278	1,175,086	258,669	44,035
New Jersey & New York.....	269	30,419	96,904	133,023	16,203	23,714	1,999	67,404	83.10	18,778	15,759	12,047	1,074
New Jersey & New York.....	3 mos.	73,791	289,216	378,468	46,799	62,078	3,420	205,918	87.20	48,399	37,214	43,405	6,918
N. Y., Susquehanna & Western.....	135	273,323	58,068	377,222	47,659	131,072	3,390	210,720	107.10	-26,865	-56,044	-69,961	71,594
N. Y., Susquehanna & Western.....	3 mos.	823,557	172,732	1,131,591	148,250	291,445	11,009	631,591	101.00	-1,604	-104,671	-144,228	1,922
Evansville, Ind. & Terre Haute.....	137	124,386	8,907	133,304	38,241	20,203	5,036	64,159	81.60	2,038	20,688	2,118	6,593
Evansville, Ind. & Terre Haute.....	3 mos.	448,698	24,078	488,707	87,858	48,010	5,663	197,236	69.50	149,225	184,181	60,222	1,758
Florida East Coast.....	763	1,211,910	799,391	2,289,573	250,545	285,165	18,667	689,801	56.80	987,959	888,955	777,230	890,142
Florida East Coast.....	3 mos.	3,212,099	2,374,443	6,332,556	708,815	803,542	68,619	1,944,740	58.30	2,639,281	2,344,823	2,054,532	2,028,072
Fort Smith & Western.....	249	109,247	18,161	135,855	29,263	25,877	3,117	44,261	86.60	1,162	8,362	-6,013	20,027
Fort Smith & Western.....	3 mos.	303,072	59,854	390,740	91,796	83,091	13,489	159,941	95.00	18,438	1,093	-36,222	3,002
Galveston Wharf Co.....	13	.....	.....	92,701	39,961	3,529	849	28,848	85.90	13,061	-3,939	-3,884	10,833
Galveston Wharf Co.....	3 mos.	.....	.....	116,919	123,297	13,048	2,891	56,944	77.70	70,595	19,620	19,881	50,617
Georgia R. R.....	328	391,496	94,397	524,026	48,573	96,613	24,201	288,046	79.50	107,604	99,745	77,886	128,528
Georgia R. R.....	3 mos.	1,105,335	281,539	1,491,338	144,774	277,640	66,999	634,999	80.30	293,509	272,057	249,839	205,347
Georgia & Florida.....	406	142,470	20,120	170,655	18,557	22,783	8,194	62,266	70.50	50,428	43,939	29,167	17,058
Georgia & Florida.....	3 mos.	376,032	56,100	457,832	53,956	64,254	24,111	175,579	74.80	115,884	96,070	55,496	57,097
Grand Trunk Western.....	347	1,335,678	158,923	1,781,849	126,860	481,211	41,147	669,298	77.10	408,250	334,746	127,159	291,323
Grand Trunk Western.....	3 mos.	4,077,863	516,840	4,668,476	342,298	1,334,442	121,631	1,987,284	81.20	914,140	705,142	163,533	213,429
Atlantic & St. Lawrence.....	166	216,174	34,453	265,968	25,968	52,256	9,442	135,690	86.14	36,866	21,690	-46,165	-156,519
Atlantic & St. Lawrence.....	3 mos.	577,868	99,196	723,707	85,787	132,907	18,661	437,457	104.26	-30,897	-71,373	-294,776	-19,021
Chic., Det. & Canada Gr. Tr. Jct.....	59	276,880	10,064	327,493	13,336	16,093	5,632	35,272	45.90	448,009	184,875	158,346	292,389
Chic., Det. & Canada Gr. Tr. Jct.....	3 mos.	689,916	28,945	827,913	37,988	40,103	16,623	179,904	45.90	448,009	184,875	158,346	292,389
Det., Grand Haven & Milwaukee.....	189	529,858	50,085	620,038	84,546	66,218	13,044	280,078	74.10	160,876	154,664	62,679	28,020
Det., Grand Haven & Milwaukee.....	3 mos.	1,393,924	129,470	1,651,794	169,244	167,434	44,513	1,226,755	74.30	425,019	409,780	154,270	2,275
Great Northern.....	8,251	5,680,124	1,001,305	7,540,184	912,193	1,605,524	151,793	3,151,477	80.90	3,742,541	2,935,541	882,554	882,554
Great Northern.....	3 mos.	15,658,134	3,033,346	21,133,586	2,361,426	4,308,733	455,016	9,435,279	82.20	3,765,067	1,751,404	2,145,709	1,162,294
Green Bay & Western.....	234	105,849	21,477	134,991	16,709	27,771	3,067	47,056	90.53	44,038	36,519	32,089	16,833
Green Bay & Western.....	3 mos.	302,347	59,927	384,221	49,596	67,730	9,382	144,873	72.60	105,208	82,684	62,084	3,845
Gulf Coast Lines.....	922	1,085,643	171,359	1,257,002	165,247	155,655	30,123	317,888	53.27	618,861	564,300	475,334	255,693
Gulf Coast Lines.....	3 mos.	2,666,137	551,517	3,394,416	495,623	477,562	84,551	892,897	59.10	1,388,404	1,225,352	1,025,273	711,229
Gulf & Ship Island.....	307	239,173	35,974	308,015	48,297	48,929	7,878	104,755	76.10	78,554	50,092	33,899	56,723
Gulf & Ship Island.....	3 mos.	699,212	111,987	902,863	138,389	122,043	23,513	271,719	69.90	271,807	192,848	154,407	140,749
Gulf, Mobile & Northern.....	465	479,993	42,573	566,592	93,955	79,294	24,450	166,253	70.00	163,845	132,915	114,736	87,207
Gulf, Mobile & Northern.....	3 mos.	1,128,166	128,443	1,515,766	240,421	226,660	67,908	500,061	71.80	427,103	341,673	291,278	252,265
Heckling Valley.....	348	1,097,629	77,225	1,241,396	118,173	380,186	12,997	409,345	77.20	283,112	189,695	297,791	175,921
Heckling Valley.....	3 mos.	3,282,598	241,174	3,728,999	347,057	1,101,121	40,242	1,248,990	76.20	885,801	606,996	970,111	408,882
Illinois Central.....	4,846	9,771,914	2,266,573	12,969,659	1,447,042	2,835,320	198,807	4,786,158	74.10	3,860,620	2,432,247	2,609,639	2,116,423
Illinois Central.....	3 mos.	29,968,940	6,876,422	39,391,414	4,402,448	8,207,922	624,515	15,205,754	75.00	9,867,033	7,082,543	7,502,044	7,184,691
Yazoo & Mississippi Valley.....	1,380	1,325,625	322,897	1,746,611	254,487	323,543	25,978	691,182	77.00	402,215	286,879	269,409	71,450
Yazoo & Mississippi Valley.....	3 mos.	4,008,621	976,852	5,231,418	763,904	860,814	72,342	2,079,638	74.40	1,342,700	996,352	959,993	188,776
Illinois Central Combined Report.....	6,226	11,097,539	2,586,470	14,716,270	1,701,529	3,148,863	224,785	5,477,540	74.40	3,732,835	2,718,122	2,879,068	2,387,873
Illinois Central Combined Report.....	3 mos.	33,969,581	7,853,074	44,642,832	5,166,352	9,068,736	696,857	17,283,992	74.90	11,209,733	8,076,995	8,462,037	7,573,467
International Great Northern.....	1,159	978,046	207,509	1,366,141	260,180	251,162	51,825	140,079	83.45	236,062	191,038	116,900	107,487
International Great Northern.....	3 mos.	2,957,163	613,211	3,993,126	762,042	749,513	104,588	1,627,119	84.49	619,286	514,544	307,492	297,663
Kansas City, Mexico & Orient.....	272	133,563	7,753	137,352	29,651	39,612	4,943	64,577	103.20	7,177	-1,793	-5,642	-12,101
Kansas City, Mexico & Orient.....	3 mos.	394,577	21,048	431,567	97,452	115,346	14,798	202,448	103.50	-15,236	-31,765	-73,447	-68,856
Kans. City, Mex. & Orient of Tex.....	465	117,856	10,757	134,515	38,255	34,000	5,322	71,447	115.20	-20,467	-24,470	-35,711	-20,890
Kans. City, Mex. & Orient of Tex.....	3 mos.	410,132	33,548	483,050	101,239	99,693	15,386	207,443	101.40	-27,419	-37,950	-70,602	-106,602
Kansas City Southern.....	767	1,212,569	155,347	1,484,526	230,681	290,963	36,585	520,587	77.80	359,109	235,959	195,398	239,935
Kansas City Southern.....	3 mos.	3,661,637	476,698	4,499,512	645,362	830,340	117,046	1,556,852	74.70	1,139,227	859,074	770,001	848,861
Texas & Ft. Smith.....	81	234,064	14,886	267,323	18,590	18,319	4,967	65,182	44.00	149,606	133,743	110,902	69,795
Texas & Ft. Smith.....	3 mos.	616,498	44,642	719,844	46,541	60,949	14,072	184,379	47.20	379,620	332,713	262,966	187,132
Kansas, Oklahoma & Gulf.....	314	121,233	10,804	138,039	17,181	39,447	8,622	74,318	86.90	24,674	18,146	18,217	54,329
Kansas, Oklahoma & Gulf.....	3 mos.	523,468	33,970	576,002	122,533	87,138	26,168	222,426	86.00	80,391	48,957	18,954	71,564
Lake Superior & Ishpeming.....	163	66,433	7,499	78,787	26,300	24,494	5,091	36,731	91.40	-15,247	-25,494	-29,302	-63,854
Lake Superior & Ishpeming.....	3 mos.	200,338	19,632	240,769	85,068	14,232	1,620	111,018	100.00	-69,264	-100,797	-108,797	-143,854
Lake Terminal R. R.....	13	.....	.....	.....	17,524	1,232	.....	87,940	106.60	-1,990	-2,937	-1,990	-3,425
Lake Terminal R. R.....	3 mos.	.....	.....	242,417	43,849	4,319	.....	161,694	106.60	-16,065	-35,279	-40,438	-11,029

[illegible]

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Operating ratio.	Net from railway operation.	Operating income (or loss).	Net operating income.	Net op. income 1923.
		Freight.	Passenger.	Total.	Way and structures.	Traffic.	Trans-shipment.					
Central New England.....	295	\$630,634	\$13,853	\$644,487	\$73,195	\$5,147	\$241,867	69.50	\$203,595	\$177,894	\$139,712	\$14,206
Central New England.....	3 mos.	1,879,332	40,432	1,919,764	264,790	14,811	711,512	70.20	591,566	514,389	388,275	51,620
New York Connecting.....	20	202,094	4,000	206,094	254,215	8,722	71,164	28.80	181,051	146,351	108,885	50,603
New York Connecting.....	3 mos.	578,187	11,737	589,924	737,994	13,926	209,166	28.30	528,828	419,428	311,733	309,248
New York, Ontario & Western.....	569	695,018	87,475	782,493	108,034	14,976	491,155	89.80	96,007	47,924	21,987	36,069
New York, Ontario & Western.....	3 mos.	2,013,108	287,368	2,300,476	339,703	46,456	1,465,150	94.80	142,270	2,057	76,766	380,744
Norfolk & Western.....	2,240	7,667,554	222,410	7,889,964	1,307,067	81,767	2,727,256	75.10	2,186,437	1,592,618	1,386,546	1,820,092
Norfolk & Western.....	3 mos.	20,755,629	2,155,450	22,911,079	3,439,405	289,760	8,593,481	79.30	4,946,847	3,220,842	2,790,115	3,489,865
Norfolk Southern.....	911	782,347	93,234	875,581	104,198	23,514	341,296	68.00	295,700	252,788	190,793	168,535
Norfolk Southern.....	3 mos.	2,391,202	295,100	2,686,302	318,306	63,665	728,918	73.80	636,516	507,433	377,377	277,950
Norfolk Southern.....	Mar.	5,692,877	1,041,030	6,733,907	919,136	147,746	2,854,429	79.00	1,559,025	883,387	1,310,556	1,113,814
Norfolk Southern.....	3 mos.	16,127,499	3,132,786	19,260,285	2,340,693	435,833	8,604,776	80.00	4,238,001	2,211,945	3,286,747	2,103,190
Northwestern Pacific.....	496	293,691	180,380	474,071	107,990	5,404	212,438	85.90	74,302	28,980	20,476	42,446
Northwestern Pacific.....	3 mos.	834,882	503,980	1,338,862	345,518	14,129	646,177	91.60	125,381	11,555	37,641	22,168
Pennsylvania R. R.....	10,484	39,419,472	11,742,225	51,161,697	4,969,121	14,388,177	634,529	80.20	11,092,218	8,748,762	6,966,141	8,765,817
Pennsylvania R. R.....	3 mos.	110,452,428	35,462,997	145,915,425	14,638,563	41,016,136	1,913,461	82.00	28,742,419	23,095,815	18,310,369	16,988,062
Baltimore, Chesapeake & Atlantic.....	87	65,357	20,162	85,519	8,331	1,446	68,031	121.00	18,756	21,780	22,220	46,311
Baltimore, Chesapeake & Atlantic.....	3 mos.	188,944	60,290	249,234	28,545	4,339	208,607	122.00	57,070	57,070	57,070	57,070
Baltimore, Chesapeake & Atlantic.....	Mar.	939,467	144,514	1,083,981	352,658	480,409	1,264,505	88.20	388,379	323,072	211,777	197,581
Long Island.....	397	2,407,622	4,167,829	6,575,451	941,201	57,008	3,678,201	88.20	843,308	703,668	512,269	305,129
West Jersey & Seashore.....	359	359,497	458,103	817,600	134,427	11,866	478,670	94.70	48,089	32,161	7,192	72,220
West Jersey & Seashore.....	3 mos.	973,685	1,289,049	2,262,734	389,330	33,716	1,411,827	99.50	11,670	11,035	61,291	58,767
Peoria & Pekin Union.....	19	25,932	2,733	28,665	11,689	765	73,104	67.50	52,520	40,020	62,674	47,155
Peoria & Pekin Union.....	3 mos.	76,072	8,130	84,202	30,404	2,048	233,777	67.80	159,443	121,943	186,063	174,782
Pere Marquette.....	2,292	3,107,057	421,246	3,528,303	425,134	50,753	1,459,671	73.10	1,034,728	892,498	644,862	664,403
Pittsburgh & Shawmut.....	2,292	8,280,291	1,258,565	9,538,856	1,041,738	160,719	4,327,600	77.20	2,387,799	1,943,200	1,542,954	1,379,499
Pittsburgh & Shawmut.....	3 mos.	24,126,68	3,435,943	27,562,621	3,435,943	1,535	10,374	126.60	20,707	20,855	2,704	48,845
Pittsburgh & Shawmut.....	Mar.	68,370	19,343	87,713	16,818	4,255	99,138	113.50	35,964	36,962	18,544	134,851
Pittsburgh & West Virginia.....	92	357,705	9,542	367,247	26,211	85,177	75,873	71.10	87,784	50,986	117,901	137,246
Pittsburgh & West Virginia.....	3 mos.	808,936	26,340	835,276	77,050	13,116	222,313	72.30	249,530	135,950	353,725	331,673
Pittsburgh, Shawmut & Northern.....	210	107,930	7,524	115,454	21,502	1,867	51,217	97.10	4,339	480	5,714	28,418
Quincy, Omaha & Kansas City.....	250	58,049	28,704	86,753	24,009	7,605	46,845	86.90	12,386	8,324	4,182	3,648
Quincy, Omaha & Kansas City.....	3 mos.	178,280	75,229	253,509	72,889	2,589	146,343	104.60	1,492	25,091	39,185	42,574
Reading Company.....	1,150	6,885,835	823,777	7,709,612	883,414	68,355	3,085,960	78.46	1,742,411	1,357,506	1,027,943	3,320,753
Reading Company.....	3 mos.	19,910,198	2,511,733	22,421,931	2,540,499	212,026	9,587,794	79.10	4,923,044	3,762,917	4,240,464	8,063,649
Atlantic City.....	170	143,133	129,488	272,621	111,585	4,169	181,614	115.80	45,061	65,177	69,998	20,416
Atlantic City.....	3 mos.	335,912	460,768	796,680	314,773	14,275	533,453	131.20	230,991	291,022	358,618	217,675
Perkinston.....	41	78,787	5,340	84,127	7,088	107	31,365	50.30	43,826	39,390	34,304	20,535
Perkinston.....	3 mos.	255,036	15,930	270,966	22,185	326	126,452	58.60	116,966	107,808	94,728	93,422
Port Reading.....	21	131,242	.....	131,242	17,707	229	77,315	58.70	71,986	55,596	17,960	63,888
Port Reading.....	3 mos.	391,762	.....	391,762	50,148	687	248,651	67.50	165,660	129,055	14,108	172,908
Richm'd, Fredericksburg & Potomac.....	117	473,513	414,686	888,199	119,954	8,984	358,665	66.20	368,537	307,611	238,295	316,017
Richm'd, Fredericksburg & Potomac.....	3 mos.	1,364,392	1,178,279	2,542,671	311,073	29,050	1,037,108	65.70	1,048,501	876,213	700,028	661,442
Rutland.....	413	371,978	126,599	498,577	84,661	8,164	240,643	75.80	146,569	111,892	119,570	124,604
Rutland.....	3 mos.	935,052	364,993	1,300,045	257,256	25,621	713,374	84.60	248,209	167,238	194,245	188,995
St. Louis-San Francisco.....	4,747	4,863,894	1,444,344	6,308,238	773,716	91,924	2,393,826	72.20	1,878,820	1,529,448	1,529,924	1,539,840
St. Louis-San Francisco.....	3 mos.	14,081,610	4,467,710	18,549,320	2,242,268	275,227	7,311,056	72.10	5,552,614	4,504,685	4,545,165	4,365,984
Pt. Worth & Rio Grande.....	235	60,696	28,110	88,806	101,492	3,886	57,106	104.00	4,055	7,911	14,679	20,383
Pt. Worth & Rio Grande.....	3 mos.	233,726	75,527	309,253	62,730	12,375	168,607	91.00	31,074	19,529	3,323	4,883
St. Louis, San Francisco & Texas.....	154	96,250	11,974	108,224	21,909	5,092	54,891	100.40	448	2,635	27,585	21,158
St. Louis, San Francisco & Texas.....	3 mos.	338,313	41,575	379,888	59,941	15,100	158,963	81.10	75,180	68,810	3,454	49,328
St. Louis Southwestern.....	969	1,336,421	149,326	1,485,747	200,117	47,015	1,416,605	70.10	469,049	396,452	323,916	563,449
St. Louis Southwestern.....	3 mos.	3,937,081	467,094	4,404,175	536,568	142,421	1,249,970	67.60	1,503,704	1,298,914	1,070,631	1,570,417
St. Louis Southwestern of Texas.....	807	463,326	90,489	553,815	180,834	20,108	279,997	108.60	52,046	77,996	38,497	180,913
St. Louis Southwestern of Texas.....	3 mos.	1,463,977	281,021	1,745,000	395,062	63,621	811,224	101.90	1,943,012	1,133,883	6,834	573,822
San Antonio & Aransas Pass.....	739	415,285	67,808	483,093	122,732	11,505	285,910	96.70	17,120	1,106	11,373	69,414
San Antonio & Aransas Pass.....	3 mos.	1,164,633	211,168	1,375,801	330,601	34,496	609,407	94.30	84,221	34,537	22,061	166,178
San Antonio, Uvalde & Gulf.....	317	82,535	18,588	101,123	27,017	4,349	51,761	92.20	7,757	5,428	4,907	10,400
San Antonio, Uvalde & Gulf.....	3 mos.	260,673	61,147	321,820	68,144	13,308	153,727	81.00	60,045	49,661	11,929	27,757
Seaboard Air Line.....	3,571	3,786,327	882,718	4,669,045	678,174	136,228	1,897,364	72.40	1,441,477	1,250,384	1,111,187	561,967
Seaboard Air Line.....	3 mos.	10,372,220	2,964,057	13,336,277	2,009,653	429,937	5,563,576	75.30	3,556,064	3,093,507	2,774,995	1,644,426
Southern Ry.....	6,849	8,886,101	2,426,395	11,312,496	2,426,154	245,209	4,576,634	73.70	3,723,568	2,692,505	2,373,080	2,616,046
Southern Ry.....	3 mos.	24,710,738	7,531,798	32,242,536	4,868,475	641,632	9,448,866	75.60	8,536,879	6,849,353	6,054,491	6,494,186
Alabama Great Southern.....	318	657,818	156,750	814,568	123,338	19,522	270,771	72.80	253,694	221,891	253,136	292,442
Alabama Great Southern.....	3 mos.	1,855,904	474,696	2,330,600	351,796	59,654	1,084,650	76.80	576,485	476,565	542,558	697,074
Cin., New Orleans & Tex. Pacific.....	338	1,519,607	339,551	1,859,158	296,385	38,142	571,187	69.40	599,102	530,847	530,046	519,179
Cin., New Orleans & Tex. Pacific.....	3 mos.	4,136,172	1,099,819	5,235,991	806,341	110,704	1,666,180	71.80	1,555,655	1,372,818	1,345,833	1,355,888

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF MARCH AND THREE MONTHS OF CALENDAR YEAR 1924—CONTINUED

Name of road.	Average mileage operated during period.	Operating revenues			Operating expenses			Total.	Operating ratio.	Net from railway operation.	Operating income (or loss).	Net operating income.	Net operating income 1922.
		Freight.	Passenger.	(Inc. misc.)	Maintenance of way and structures.	Equipment.	Traffic.						
Georgia Southern & Florida.....	Mar. 401	\$272,865	\$109,177	\$415,554	\$70,576	\$58,748	\$10,077	\$166,103	77.10	\$95,056	\$76,903	\$42,878	\$68,944
Georgia Southern & Florida.....	3 mos. 401	783,324	359,784	1,239,400	215,000	172,409	28,515	475,727	75.50	304,035	246,853	130,406	134,977
New Orleans & Northeastern.....	Mar. 207	360,478	87,479	448,300	72,004	80,891	10,267	131,445	68.70	131,562	114,197	120,968	115,161
New Orleans & Northeastern.....	3 mos. 207	1,131,369	244,177	1,474,178	208,564	280,046	31,788	452,929	70.50	434,853	321,315	318,154	222,041
Northern Alabama.....	Mar. 110	120,063	14,135	134,400	25,541	5,829	2,666	44,769	55.00	55,548	46,511	15,068	29,583
Northern Alabama.....	3 mos. 110	338,137	42,133	410,134	48,721	21,109	7,317	130,484	59.00	192,933	172,816	98,842	84,788
Southern Pacific.....	Mar. 7164	10,465,655	3,718,880	15,737,038	2,484,284	2,992,777	285,974	5,495,914	76.20	3,746,318	2,516,154	2,374,808	3,576,508
Southern Pacific.....	3 mos. 7164	29,527,357	10,632,853	44,602,627	7,001,276	8,754,334	888,701	15,716,510	77.50	10,020,155	6,450,403	6,114,617	7,139,644
Arizona Eastern.....	Mar. 382	258,040	28,902	300,012	56,310	47,565	3,251	112,709	80.60	58,106	31,463	30,794	90,778
Arizona Eastern.....	3 mos. 382	752,765	87,987	884,201	163,619	134,156	9,845	312,784	77.80	196,633	115,958	104,052	253,191
Atlantic Steamship Lines.....	Mar.	895,007	51,818	946,825	1,008,411	168,073	17,873	679,912	92.90	91,706	79,772	79,642	219,050
Atlantic Steamship Lines.....	3 mos.	2,661,820	146,843	2,808,663	3,286,369	458,009	61,861	2,086,295	92.70	216,962	181,002	179,704	614,756
Galv'n, Harrisb'g & San Antonio, Mar. 1379	1,534,757	430,599	2,096,151	436,706	404,172	44,984	754,026	1,747,482	83.40	348,669	280,837	220,497	133,151
Galv'n, Harrisb'g & San Antonio, Mar. 1379	4,352,081	1,310,167	6,129,874	1,259,198	1,326,129	140,204	2,248,603	2,610,411	85.90	1,277,600	663,034	520,762	306,164
Houston & Texas Central.....	Mar. 923	827,549	257,802	1,085,351	318,722	246,014	23,736	418,579	89.10	1,042,084	87,250	79,601	18,711
Houston & Texas Central.....	3 mos. 923	2,464,419	750,314	3,254,496	909,086	732,461	75,412	1,283,059	90.40	332,400	189,704	51,900	92,706
Houston, East & West Texas.....	Mar. 191	214,276	45,207	274,195	78,131	62,395	3,493	110,801	95.70	11,656	3,056	11,201	12,313
Houston, East & West Texas.....	3 mos. 191	603,787	128,591	733,565	236,254	190,639	10,865	326,252	101.20	9,560	35,577	74,350	28,572
Louisiana Western.....	Mar. 207	219,085	86,862	305,947	56,555	57,591	13,285	104,046	75.70	81,279	54,322	52,033	74,732
Louisiana Western.....	3 mos. 207	731,462	265,547	1,077,280	158,211	206,459	37,272	327,276	73.70	283,309	194,028	194,201	236,576
Morgan's L & T. R. R. & S. Co. Mar. 400	491,477	144,406	693,336	158,007	141,701	15,718	59,885	297,330	94.00	41,735	1,921	18,296	24,539
Morgan's L & T. R. R. & S. Co. Mar. 400	1,459,295	440,679	2,067,590	435,869	515,718	19,538	186,842	1,998,129	96.60	69,481	66,815	124,563	80,342
Texas & New Orleans.....	Mar. 507	539,926	164,104	756,123	227,459	159,492	13,127	303,499	92.80	54,755	25,787	19,970	48,730
Texas & New Orleans.....	3 mos. 507	1,562,266	486,943	2,222,289	701,062	533,334	41,198	892,689	98.50	32,748	55,155	178,726	58,616
Spokane International.....	Mar. 165	84,281	16,816	106,094	13,398	9,420	3,083	35,040	63.40	38,789	33,030	26,672	38,357
Spokane International.....	3 mos. 165	250,463	48,896	284,930	36,287	24,323	9,763	103,593	68.10	90,899	73,385	54,669	63,320
Spokane, Portland & Seattle.....	Mar. 554	512,767	115,835	685,856	66,854	13,384	8,994	211,417	65.20	238,630	167,945	145,804	155,719
Tennessee Central.....	Mar. 296	173,478	38,105	231,437	168,702	379,413	28,430	612,346	63.20	237,365	521,929	430,947	356,685
Tennessee Central.....	3 mos. 296	483,635	119,714	603,952	91,687	93,873	9,531	155,855	78.90	53,472	119,891	34,959	38,521
Term. Railroad Assoc. of St. Louis, Mar. 37	.....	.....	.....	.....	.....	.....	.....	.....	76.90	53,472	119,891	34,959	38,521
Term. Railroad Assoc. of St. Louis, Mar. 37	.....	.....	.....	.....	.....	.....	.....	.....	78.90	83,153	61,577	121,630	24,931
East St. Louis Connecting.....	Mar. 1	.....	.....	.....	.....	.....	.....	.....	79.70	248,410	61,577	365,717	544,786
East St. Louis Connecting.....	3 mos. 1	.....	.....	.....	.....	.....	.....	.....	52.10	89,177	79,670	55,767	92,072
St. L. Merchants' Bridge Term. Mar. 9	.....	.....	.....	.....	.....	.....	.....	.....	56.60	280,094	251,706	180,327	255,801
St. L. Merchants' Bridge Term. Mar. 9	.....	.....	.....	.....	.....	.....	.....	.....	70.60	120,424	101,720	103,327	124,474
St. Louis Transfer Ry.....	Mar. 6	.....	.....	.....	.....	.....	.....	.....	73.90	339,856	261,320	249,161	318,462
St. Louis Transfer Ry.....	3 mos. 6	.....	.....	.....	.....	.....	.....	.....	90.50	6,199	5,255	1,503	17,220
Texas & Pacific Ry.....	Mar. 1,932	1,832,876	577,042	2,423,454	403,793	591,031	54,723	931,301	87.00	29,171	27,547	3,969	50,154
Texas & Pacific Ry.....	3 mos. 1,932	5,396,663	1,744,662	7,141,325	1,264,395	1,532,547	167,134	2,829,268	76.40	1,882,204	1,460,609	1,216,486	58,171
Toledo, Peoria & Western.....	Mar. 247	103,537	53,530	170,264	18,039	35,037	2,349	70,793	78.30	36,968	25,468	16,886	7,595
Toledo, Peoria & Western.....	3 mos. 247	279,656	144,197	423,853	56,452	107,811	6,645	221,372	89.10	50,622	19,080	2,378	40,463
Trinity & Brazos Valley.....	Mar. 368	181,161	24,813	213,977	63,984	59,251	3,092	93,395	108.20	17,576	24,867	50,682	22,754
Trinity & Brazos Valley.....	3 mos. 368	466,916	68,698	535,614	170,721	169,587	9,764	274,529	118.00	100,806	122,444	188,762	93,132
Ulster & Delaware.....	Mar. 128	54,179	12,683	66,862	9,624	14,758	1,684	56,067	95.70	95,410	1,288	39,998	15,614
Ulster & Delaware.....	3 mos. 128	129,192	35,312	164,504	42,381	40,072	5,220	153,212	105.90	15,201	31,782	69,226	245,629
Union R. R. of Penna.....	Mar. 45	.....	.....	.....	.....	.....	.....	.....	95.40	118,411	85,411	33,201	692,427
Union R. R. of Penna.....	3 mos. 45	.....	.....	.....	.....	.....	.....	.....	67.00	2,784,353	2,125,928	2,070,538	2,413,927
Union Pacific.....	Mar. 3,714	6,362,444	1,341,317	8,426,342	738,966	1,892,908	139,120	2,425,671	67.00	7,923,938	5,949,755	5,820,412	5,849,256
Union Pacific.....	3 mos. 3,714	18,571,837	3,763,732	24,572,004	2,006,052	5,239,460	402,201	7,694,991	73.00	808,048	530,230	493,474	520,169
Oregon Short Line.....	Mar. 2,363	2,397,652	887,850	2,989,401	493,168	543,560	44,102	937,328	73.60	2,250,760	1,416,948	1,288,651	1,398,063
Oregon Short Line.....	3 mos. 2,364	6,820,705	1,121,407	8,525,934	1,135,298	1,675,113	127,740	2,856,557	80.20	473,774	302,600	217,294	51,115
Oregon Wash. R. R. & Nav. Co., Mar. 2,231	1,795,749	405,194	432,691	1,235,054	60,011	859,671	120,744	1,924,650	76.80	1,643,301	1,332,474	906,461	399,637
Oregon Wash. R. R. & Nav. Co., Mar. 2,231	5,346,651	1,173,976	7,096,824	1,032,164	1,181,611	1,501,887	182,843	2,453,523	82.50	48,447	35,132	21,137	11,884
St. Joseph & Grand Island.....	Mar. 258	234,682	27,585	277,900	47,434	50,187	2,854	115,256	78.60	177,865	137,917	95,387	33,282
St. Joseph & Grand Island.....	3 mos. 258	709,365	76,885	830,346	115,482	142,671	8,761	348,102	86.70	12,812	6,521	4,688	14,909
Utah.....	Mar. 102	95,426	449	96,291	15,527	12,785	1,090	303,538	86.70	12,812	6,521	4,688	14,909
Utah.....	3 mos. 102	392,971	1,426	395,863	59,628	40,661	12,392	516,838	71.70	451,467	307,733	314,635	886,124
Virginian.....	Mar. 544	1,408,701	73,780	1,553,336	173,256	406,661	37,444	1,522,003	64.80	1,709,466	1,272,860	1,287,656	1,766,742
Virginian.....	3 mos. 544	4,353,165	212,104	4,857,020	402,022	1,121,871	37,444	1,522,003	76.40	1,355,323	1,118,673	781,831	819,196
Wabash.....	Mar. 2,486	4,628,054	750,257	5,378,311	825,383	978,390	130,396	2,249,098	79.30	3,358,306	2,664,105	1,735,556	1,458,436
Wabash.....	3 mos. 2,486	12,911,415	2,202,086	16,214,667	2,140,636	2,927,458	395,437	6,816,709	73.60	463,129	373,129	368,395	402,526
Western Maryland.....	Mar. 804	1,593,349	68,730	1,662,079	216,531	385,211	33,943	590,801	73.60	1,341,124	1,071,124	1,036,613	1,057,613
Western Maryland.....	3 mos. 804	4,649,462	197,621	5,078,437	614,322	1,111,086	106,736	1,728,902	86.40	131,432	48,441	110,543	150,872
Western Pacific.....	Mar. 1,042	739,317	164,918	966,769	180,039	211,652	35,407	421,866	86.50	372,320	308,672	301,832	301,832
Western Pacific.....	3 mos. 1,042	2,170,432	406,678	2,558,869	458,895	607,028	102,206	1,052,219	78.30	363,015	249,268	192,176	163,657
Wheeling & Lake Erie.....	Mar. 511	1,512,006	59,196	1,669,280	199,831	454,701	74,848	1,709,973	77.00	1,090,047	751,947	623,668	95,441
Wheeling & Lake Erie.....	3 mos. 511	4,301,573	174,045	4,733,964	488,894	1,256,951	74,848	1,709,973	77.00	1,090,047	751,947	623,668	95,441

Wage Statistics for February

The number of employees reported by Class I railroads for February, 1924, was 1,753,289, an increase of 3,362 or 0.2 per cent over the number reported for the previous month, according to the Interstate Commerce Commission's monthly summary of wage statistics. Compared with the returns for the same month last year, the summary for February, 1924, shows a decrease of 1.7 per cent in the number of employees, and a decrease of 1.6 per cent in the number of hours reported; but owing principally to an increase in the average hourly earnings, the total compensation shows an increase of 0.2 per cent.

The monthly earnings by groups were as follows:

Group	Monthly earnings of			
	Employees reported on daily basis.		Employees reported on hourly basis.	
	Feb., 1924	Feb., 1923	Feb., 1924	Feb., 1923
Executives, officials, and staff assistants.	\$434	\$423	...	...
Professional, clerical, and general.	181	176	\$120	\$115
Maintenance of way and structures.	240	238	87	81
Maintenance of equipment and stores.	244	242	118	118
Transportation (other than train, engine, and yard)	97	93	118	112
Transportation (yardmasters, switch tenders, and hostlers)	254	254	141	141
Transportation (train and engine service)	...	...	184	183

Increases or decreases in the number of employees, by groups, February, 1924, compared with previous month, and with February, 1923.

Group	February, 1924 compared with	
	Jan., 1924	Feb., 1923
Executives, officials, and staff assistants.	(d) 28	78
Professional, clerical, and general.	(d) 745	2,863
Maintenance of way and structures.	(d) 701	8,822
Maintenance of equipment and stores.	(d) 3,159	34,213
Transportation (other than train, engine and yard)	2,038	1,537
Transportation (yardmasters, switch tenders, and hostlers)	(d) 19	571
Transportation (train and engine service)	5,976	5,708
Net increase or decrease.	3,362	30,266

The Condition of the Lehigh Valley Since the Strike

The Interstate Commerce Commission held a further hearing on April 24 in connection with its investigation of the economy and efficiency of management of common carriers, relating to the Lehigh Valley, at which officers of that road put in testimony regarding the present condition of the road in contrast to the condition, shown at earlier hearings, while the shop strike was in progress. President E. E. Loomis said in part:

"The Lehigh Valley today is in better condition from every standpoint and better equipped to meet all traffic demands upon it than at any time in its history. Its 1923 revenues were the largest it ever had, and the first quarter of 1924 was its best for any similar period. Its track, motive power and rolling stock are at a high point of efficiency. More than half of its main line is now laid with 136-lb. rail, the heaviest standard rail in use, and over two-thirds of its tracks are equipped with creosoted ties. As a result tie renewals annually are less than half what they were before this practice was inaugurated and important reductions are being made in new rail requirements.

"Thirty new freight locomotives of the Mikado type were placed in service in 1923 and 40 more freight engines and 10 passenger engines have been added to the company's equipment since the first of the year. As of April 19, 1924, it had 107 serviceable engines or 10.3 per cent in white lead and only 14.02 per cent of all its power out of service awaiting repairs requiring more than 24 hours. As of April 15, 1924, only 6.3 per cent of the Lehigh Valley's freight car ownership was awaiting repairs.

"Since the end of Federal control the Lehigh Valley has rebuilt 22,863 of its 35,000 freight cars at a cost of more than \$12,800,000. These cars are now in good condition and have as great an expectation of service life as new cars of the same type, which would have cost approximately \$43,327,000.

"Relations between the management of the Lehigh Valley and its employees are harmonious. We have a full force in every department and the production at every point is eminently satisfactory. Our mechanical department has never been more efficiently operated. Under the conditions now obtaining the men appear to be happier than ever before. The good mechanic no longer feels he must do no more than the drone because they receive the same pay. There are no drones now, and the better and more industrious workman gets the better pay."

National Chamber of Commerce

Opposed to Changes in Transportation Act

The transportation referendum which has been carried out by the National Chamber of Commerce was reported on at the annual meeting of the chamber at Cleveland, Ohio, on May 7. On the principal question, the continuation of the principles of the Transportation Act, 1920, without change, until there shall have been further experience with the law, the affirmative vote was 1857; negative 122. The thirteen recommendations of the sub-committee on transportation were also carried by large majorities; a smaller majority was recorded endorsing the recapture clause; 1392 affirmative, 542 negative. Other recommendations approved by the referendum vote covered the co-ordination of all transportation agencies; supplemental legislation to facilitate voluntary consolidations; co-ordination and joint use of terminals; regulation of railroads by administrative rather than legislative bodies; prompt readjustment of freight rates rather than general reductions, and the regulation of the rates and services of motor common carriers by state and federal commissions.

The sessions of the transportation group of which Carl R. Gray, president of the Union Pacific, served as chairman, discussed the postal service and passed a resolution advocating the abandonment of the system of uniform wage scales for postal employees.

George M. Graham, president of the Chandler Motor Car Company, outlined recent developments in motor transport and advocated co-ordination of all transportation agencies. H. G. Taylor, president of the National Association of Railway and Utility Commissioners described the work of the regional advisory boards and cited this as an evidence of the improved relations between shippers and carriers. At Wednesday's session a resolution was adopted opposing the Howell-Barkley Bill.

Branch Lines for Canadian Railways

More rapid progress was made at this week's sitting of the committee on railways, canals and telegraph lines of the Canadian Parliament which is dealing with the Canadian National branch lines program, and 10 bills were reported at one sitting, whereas it required almost an entire sitting last week to report one bill. In addition to these ten Canadian National branch lines favored at this week's sitting there were ten branch line charters of the Canadian Pacific extended to permit of completion in the case of four and to permit commencement of construction in the case of six others. One reason for the despatch shown this week was that Sir Henry Drayton, who led the attack on the C. N. bill last week, was unable to be present but designated to the chairman of the committee, Frank Cahill, a number of bills which he regarded as non-contentious and these were dealt with. Another reason for the speedy reporting of the bills was that Sir Henry Thornton, president of the Canadian National, appeared before the committee and made a full statement of the circumstances attending the preparation of the branch line program.

"I hope," said Sir Henry, "that the only competition that will develop between the Canadian Pacific and the Canadian National will be in the direction of giving the people a constantly improved service and constantly improved traffic facilities. There is nothing between us of a really contentious nature. The Canadian Pacific is developing its territory and we are doing the same thing in precisely the same manner. There will be from time to time contact between us involving questions of competition or possibly duplication. When that arises it is for both of us to sit down together and see what will involve the least amount of expenditure and get the best service."

The ten Canadian National branch lines approved by the committee this week were: St. Paul, Alta., 21 miles, estimated cost \$525,000; Eston, Sask., 35 miles, \$639,000; Eyre, Sask., 25 miles, \$463,000; Paddockwood, Sask., 23 miles, \$406,000; Kelvington, Sask., 13 miles, \$290,000; Turtleford, Sask., 102 miles, \$2,313,000; Ste. Rose du Lac, Man., 22 miles, \$378,000; Gravelbourg, Sask., 11 miles, \$144,000; Peebles, Sask., 22 miles, \$300,000; Grande Fresniere, Que., 12 miles, \$357,000. The Canadian Pacific branch line charters extended were for the following: Archive-Wymerk, Sask.; Rosetown, Sask.; Lanigan-Melfort, Sask.; Leader-Success, Sask.; Duchess, Alta.; Pheasant Hills, Sask.; Rosetown-Keppel, Sask.; Kelfield, Sask.; Amulet-Dunkirk, Sask.; Kipp, Alta.

Traffic News

The Michigan Central is planning to establish an automobile freight truck line between Jackson, Mich., and Kalamazoo, 68 miles, on which trucks will be operated each way daily.

The New York Central announces that beginning May 18 a new through passenger train will be run from New York to Toronto by way of the Toronto, Hamilton & Buffalo and the Canadian Pacific, leaving New York at 6:30 p. m. and running through in 13 hours 20 minutes.

The Traffic Club of Chicago and the Chicago Shippers' Conference Association will hold a joint open forum meeting at the LaSalle Hotel, Chicago, on May 12, to discuss railroad consolidation. The discussion will be led by W. A. Colston, vice-president and general counsel of the New York, Chicago & St. Louis.

The Illinois Central will equip the Diamond Special, its late night train between Chicago and St. Louis, which leaves both cities at 11:30 p. m., with a salon-buffet car. The car offers the traveler several innovations, including shower bath facilities and valet service and serves refreshments and luncheons beginning at 9:30 p. m.

The House committee on merchant marine and fisheries after a series of hearings on bills to amend section 28 of the merchant marine act, has favorably reported a bill to postpone the effective date for the enforcement of the section until May 1, 1925. It is understood that this postponement is also favored by President Coolidge.

The Canadian Pacific and the Minneapolis, St. Paul & Sault Ste. Marie moved their Chicago ticket offices to the first floor of the Straus building on May 1. The combined general staffs of the railway and steamship departments, including the offices of the general agents of the railway and steamship passenger departments will be located on the tenth floor.

The Mobile Traffic & Transportation Club has been formed at Mobile, Ala., as the successor of the Dixie Railway Club; President H. E. Warren (G. M. & N.); First Vice-President J. H. Patterson (M. & O.); Second Vice-President W. A. Benson (Mobile Paint Company); Secretary T. C. Schley (G. M. & N.); Treasurer C. G. Lang (G. M. & N.).

The Great Northern is offering prizes aggregating \$500 to ticket agents or ticket sellers in any railroad or steamship ticket office, except employees of the Great Northern, for a slogan to be added to the name of the Oriental Limited which is to have all new cars. The offer includes a first prize of \$250, a second of \$125, a third of \$75 and a fourth of \$50. The contest closes May 31.

Beginning April 27 the Grand Trunk-Canadian National in connection with the Lehigh Valley, established a new train service between Chicago and New York, operating daily trains over the Grand Trunk Western and the Lehigh Valley. The train eastbound leaves Chicago at 12:45 p. m. and arrives at Pennsylvania Station, New York, at 5:45 p. m. Westbound, the train leaves New York at 11:50 a. m. and arrives in Chicago at 2:50 p. m. the following day.

The following officers of the Southern California Passenger Association were elected on March 28: President, H. R. Bullen, assistant general agent of the Canadian National; first vice-president, J. C. Kinzy, district passenger agent of the Wilmington Transportation Company; second vice-president Leslie W. Tuttle, representative of the New York, Chicago & St. Louis; and secretary-treasurer, Allen T. Smith, editor and publisher of the California Traffic Journal.

Between Norfolk, Va., and Suffolk, about 20 miles, the competition of jitneys has forced a reduction of round trip fares on the railroads. The Norfolk & Western, the Seaboard Air Line and the Southern sell a round trip ticket for passage between the two points for \$1, a reduction of 66 cents; tickets good for 10 days. The Virginian and the Atlantic Coast Line have not announced

reductions, but have the question under consideration. Bus lines charge a dollar for a round trip and 75 cents one way.

The Southern Railway, as a result of the successful operation of its special fast automobile train from Cincinnati to Atlanta has begun a similar service from Cincinnati and Louisville to Asheville, N. C. The train is known as the Tennessee-Carolina automobile special and leaves Cincinnati at 10 p. m. It reaches Knoxville, Tenn., at 4:50 p. m. the next day, Asheville, N. C., at 6 a. m., Spartanburg, S. C., at 2:30 p. m., and Salisbury, N. C., at 7:50 p. m. the second day, and Greensboro, Charlotte and Winston-Salem on the morning of the third day.

An omnibus line which operates under the name of Parlor Car Tours from Los Angeles, Cal., to San Diego, Santa Barbara, Riverside, Hollywood, Pasadena and various beaches, has applied to the California Railroad Commission for a certificate to operate passenger tours between Los Angeles and San Francisco, running parlor cars on a two-day and a three-day schedule. A rate of \$37.50 including transportation, meals and hotel charges for a two-day tour is proposed, of which \$25 is the charge for transportation. The company proposes to charge \$47.50 for the three-day tour.

The committee on freight claim prevention of the American Railway Association will conduct a special drive during June to increase the use of box strapping. The plans for the campaign include the publication of a circular for distribution to shippers and consignees, and the distribution of educational circulars setting forth the varied uses and benefits of wire or strap reinforcements. It is also recommended that each railroad use special blanks for reporting to the prevention department, inspection bureau or special service department the names and addresses of shippers whose containers should be strapped.

Zion National Park, in southwest Utah, the route to which is over the Los Angeles & Salt Lake (Union Pacific) by way of its 32-mile branch from Lund, Utah, to Cedar City, is the subject of a descriptive pamphlet which has been distributed to ticket agents by T. C. Peck, general passenger agent, Los Angeles, Cal. Detailed instructions and information are given concerning automobiles, hotels and guides, and the territory covered includes also Cedar Breaks, Bryce Canyon and the north rim of the Grand Canyon, in Arizona. The scenery in these Utah resorts, illustrated in this pamphlet by beautiful half-tone engravings, rivals, or perhaps equals, that of the Grand Canyon.

A joint resolution, H. J. Res. 253, to provide for an investigation by a special commission concerning the termination of the suspension of the operation of the provisions of section 28 of the merchant marine act, the proper effective date and other matters relating to its operation, has been introduced in Congress by Representative Brand, of Ohio. The commission would consist of four members of the House, four senators and four additional persons to be designated by the secretary of state, the Interstate Commerce Commission, the Shipping Board and the secretary of commerce; and would be required to report its recommendation to Congress by the first day of the next regular session.

The introduction of peas, spinach and cabbage into localities where they have not been extensively raised before, constitutes one of the features in which the agricultural specialists of the Lackawanna railroad have aided the farmers along the lines of that company in New York, Pennsylvania and New Jersey. This we learn from an advertisement of the road, printed in the daily papers. Also largely through the efforts of these men, the farmers of Cortland County, New York, are now raising seed potatoes equal to those which come from Long Island and from Maine. War on plant diseases is another thing in which the railroad men credit themselves with some of the successful work of recent years.

Too Much National Thinking

Proposed new plans for calculating freight rates fly in the face of 90 years' experience, says a circular issued by F. H. Alfred, president of the Pere Marquette Railway. One impracticable plan is to make the rate fabric such that all commodities would be classified into two arbitrary groups, according as they are considered necessities and as such favored with a low rate, or as luxuries and as such paying a higher rate, i. e., making a wider spread between the rates on these two classes of commodities. Railroad rates have been built up by traffic experts through a period

of ninety years, in the light of experience and with regard to the character of the traffic of the communities served. No two railroads have the same character of commodities to transport. For instance, some of the southern roads have a heavy movement of citrus fruit, which under an arbitrary decision might be classified entirely as a luxury. In good times, these would perhaps move more freely; in times of stringency, they would not move at all. How then could the southern railroads maintain service without returns? Could Iowa stand the expense of movement of its corn crop if the last mile of service were charged at the same rate as the first mile? If not would Iowa locally consume all of its production of grain?

Surely, the experience of over 90 years of continuous railroad operation in the United States ought to be a guide for the future. Surely, the studies of the Interstate Commerce Commission ought to have some weight, otherwise why maintain this body? There is too much thinking nationally about matters that are purely local.

"Summer Land" on the Erie


The Erie Railroad's guide to the summer resorts on its lines tributary to New York City, entitled "Road to Summer Land" has been issued for 1924, a very compact booklet of 65 pages, 8 in. by 5 3/4 in. It is embellished with a dozen full page photographic illustrations and has two excellent large-scale maps of the region covered; one a regular map, showing a large territory, and the

ERIE RAILROAD

The Scenic Passenger Route

BETWEEN

NEW YORK & CHICAGO



ERIE RAILROAD

1924 Vacation Booklet

"Road To Summer Land"

WITH

NEW HIGHWAY MAP FOR AUTOMOBILISTS

GET A COPY OF BOOKLET FROM ERIE TICKET AGENT
OR J. F. SHINN, GENERAL PASSENGER AGENT
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other, taking in the region from Newburgh and Harriman westward to Susquehanna and Scranton, giving prominence to highways tributary to the railroad; state highways, other improved highways and common roads.

The passenger department's poster advertising the booklet is 30 in. by 46 in. and is reproduced on a small scale herewith. The picture, which is a view looking east along the Delaware River from Callicoon, N. Y., is shown on the poster in five colors.

Commission and Court News

Interstate Commerce Commission

The commission has postponed the hearing set for May 7 on the excess earnings of the Duluth, Missabe & Northern.

The commission has postponed until a date to be set later the hearing announced for June 4 on interchangeable mileage books.

The commission has suspended from May 5 and later dates until September 2, 1924, the operation of certain schedules of freight rates from, to, and between points in Southwestern territory which propose to revise the rates on cooperage, bakery goods, cans, etc., iron and steel articles, meats, stoves, sugar, and other articles in Southwestern lines territory, and purport to be established in conformity with orders of the commission in the Memphis Southwestern Case.

Personnel of Commissions

Frank G. Ewald, chief engineer of the Illinois Commerce Commission, died in Evanston, Ill., on April 27. Mr. Ewald was born in Winona, Minn., in 1863, and graduated from the University of Minnesota. During the five years 1907-1912 he was a member of the Block Signal & Train Control Board of the Interstate Commerce Commission, which made studies of automatic train control devices, and various safety problems. Previous to the creation of the Illinois Commerce Commission, Mr. Ewald was for many years chief engineer of its predecessor the Railway and Warehouse Commission of Illinois.

Court News

Jewelry For Sale Not Baggage

Articles of jewelry carried by a passenger in his trunk and intended for sale are not within the Interstate Commerce Commission rule allowing samples as baggage, although the pieces of jewelry sold were being constantly reordered, and the passenger was not entitled to special damages for delay in transit.—*Klein v. Southern Pac.* (Cal. App.), 218 Pac. 447.

Connecting Carrier Not Liable for Erroneous B. L.

The B. & M. receipted for 12 bales of goods in Massachusetts for shipment to New York. Only 6 bales were delivered to the railroad. The car containing them was received by the New Haven with seals unbroken. On being opened at New York, only six bales were found. New York Appellate Term holds the New Haven, as connecting carrier, was not liable.—*Lahn & Simons*, 200 N. Y. Supp. 357.

Jurisdiction in Equity to Restrain Taxation of Railroads Based on Overvaluation

The Chicago, Burlington & Quincy, Chicago & North Western, and Chicago, St. Paul, Minneapolis & Omaha, brought bills in equity in the federal district court of Nebraska to restrain the collection of taxes for 1922 on the ground that the farm lands in Nebraska were systematically and intentionally undervalued while the railroad properties were valued at their full worth and more. Three judges sitting under Sec. 266 of the Judicial Code held that the plaintiffs had an adequate remedy at law under the Nebraska statutes in prosecuting error proceedings to the state Supreme Court, and therefore denied a preliminary injunction.

On appeal, the Supreme Court of the United States has reversed these decrees, holding that "when such a charge as the present is made it can be tried fully and fairly only by a court that can hear any and all competent evidence, and that is not bound by findings of the implicated board for which there is any evidence, always easily produced"; and that the judges should dispose of the application for a temporary injunction on the merits.—*C. B. & Q. v. Osborne*. Opinion by Justice Holmes. Decided April 28, 1924.

Oklahoma Commission Cannot Require Construction of Crossing Where No Highway Lawfully Established

Where no highway or crossing has been lawfully established or opened over a right of way the Oklahoma Corporation Commission has no jurisdiction to require the railroad to construct such crossing; and prohibition will lie to prevent the enforcement of an order for the construction of such unauthorized crossing.—St. Louis.—S. F. State Corporation Commission (Okla.), 218 Pac. 821.

Intrastate Tariff for Logs in Washington

The Supreme Court of the State of Washington affirmed an order of the department of public works establishing uniform intrastate freight tariff rates for logs for a test period of 12 months or until further order of the department. It was held that the average cost per ton mile on the entire systems of four competing carriers was properly taken as the basis of the tariff although less than the ton-mile cost on the railroads' trackage within the state, and still less than such costs on the branch lines carrying most of the logs.—Northern Pacific v. Department of Public Works (Wash.), 217 Pac. 507.

State Commission's Order as to

Interstate Telegraph Service Enjoined

The Kansas Supreme Court holds that the improved telegraph service at Oberlin ordered to be instituted by the Public Utilities Commission was altogether of an interstate character; the order was primarily, not secondarily or incidentally, intended to accomplish that purpose, and was therefore an effort to regulate interstate commerce in a field withdrawn from state control. All complaints as to the service were as to delays in service to and from points out of the state. Injunction of the order was therefore directed.—Chicago, B. & Q. v. Reed (Kan.), 217 Pac. 322.

United States Supreme Court

Agreement to Provide Cars on

Specified Date Illegal Discrimination

While the railroads were under federal control, a shipper ordered of a station agent empty cars to be ready October 2, 1918, to ship cattle in interstate commerce. He subsequently sued the federal agent in the Montana state courts for damages for failure to supply the cars, relying on an express contract to furnish them on the day named. It was not shown or contended that the published tariffs provided in terms for such a contract. The trial court instructed the jury that, if the promise was made, the defendant was liable for its breach, even if the carrier was unable to furnish the cars. Judgment on verdict for the plaintiff was affirmed by the state Supreme Court, and the case was brought before the federal Supreme Court on certiorari; the only question being whether, under the Interstate Commerce Act the express promise to furnish cars was valid.

The United States Supreme Court has reversed the judgment of the state court, holding that the alleged contract to supply cars on a day certain was illegal and invalid when not provided for in the tariff, as providing for a special advantage to an individual shipper. The court said:

"The transportation service to be performed was that of common carrier under published tariffs, not a special service under a special contract, as in Chicago, R. I. & Pac. v. Maucher, 248 U. S. 359. The agent's promise that the cars would be available on the day named was introduced to establish an absolute obligation to supply the cars, not as evidence that the shipper had given due notice of the time when the cars would be needed, or as evidence that the carrier had not made reasonable efforts to supply the cars. The obligation of the common carrier implied in the tariff is to use diligence to provide, upon reasonable notice, cars for loading at the time desired. A contract to furnish cars on a day certain imposes a greater obligation than that implied in the tariff. For, under the contract, proof of due diligence would not excuse failure to perform. The contract to supply cars for loading on a day named provides for a special advantage to the particular shipper, as much as a contract to expedite the cars when loaded (which was declared illegal in C. & A. v. Kirby, 225 U. S. 155). It was not necessary to prove that a preference resulted in fact. Davis v. Cornwell. Opinion by Justice Brandeis. Decided April 21, 1924.

Labor News

The Labor Board has intervened in a dispute between the Terminal Railroad Association of St. Louis and the Order of Railroad Telegraphers over a new contract governing wages and working rules. Failure of the two parties to reach an agreement had led to talk of a strike and the Labor Board, under the authority of the Transportation Act, ordered that the dispute be brought before it. Hearings began at Chicago on May 5.

Election of a new chairman of the United States Railroad Labor Board will take place as soon as Chairman Ben W. Hooper of the board returns from Washington. Mr. Hooper has already issued a statement that he would not accept re-election. Former Governor Edwin P. Morrow of Kentucky, who was appointed a member of the public group of the board late last year, is considered the most likely selection for the position in the coming election.

Labor Board Decisions

Contracting of Coal Chute Work

Contracting of the work in connection with the operation of a coal chute is in violation of the Transportation Act, according to a decision of the Railroad Labor Board in a dispute between the United Brotherhood of Maintenance of Way Employees and Railway Shop Laborers and the Chicago & North Western. The Labor Board ordered that four employees, whose positions had been abolished at the time of the contracting of the work, be returned to their positions.—Decision No. 2314.

Jurisdiction of Labor Board

The Labor Board, in the dispute between the Federated Shop Crafts and the Great Northern, has rendered a decision that it is without jurisdiction in disputes between a railway and men not in its employ. This case related to a memorandum agreed upon by the Great Northern and a representative of its striking shopmen which set forth conditions upon which they would be returned to their former positions. The Labor Board recognized the fact that the strikers were referred to in the memorandum not as employees but as "former employees" and "applicants for employment." The application of the Federated Shop Crafts for the reinstatement of one of the strikers was denied by the Labor Board.—Decision No. 2302.

Replacement of Passenger Brakemen by Porters

The Railroad Labor Board, in a series of disputes between the Order of Railway Conductors, the Brotherhood of Railroad Trainmen and the Missouri-Kansas-Texas relative to the replacement of passenger brakemen with negro porters on certain trains of the railway, has ordered that the brakemen who were displaced shall be reinstated in their positions. In a dissenting opinion signed by Horace Baker and J. H. Elliott, railroad members, it was pointed out that the question of duties performed, which was apparently the basis upon which the decision was reached, was no part of the question submitted, claim having been made that the replacement of brakemen by porters had been carried out for the purpose of reducing the wages of employees performing brakemen's duties. It was shown that the practice of operating trains with reduced crews, often only a conductor and a porter or a conductor and a brakeman, is common on lines where traffic is so light as to make increased operating expense prohibitive. The dissenting opinion concluded by saying, "To require the carrier to maintain arbitrarily a number of members of a crew in excess of requirements or to unnecessarily increase expense of operation of the trains would be in conflict with that part of principle 1 to Decision No. 119 (as well as the provisions of the Transportation Act) calling upon the carriers and the employees alike to provide economical as well as efficient service, in the interests of the public."—Decisions Nos. 2329, 2330, 2331, 2332 and 2333.

Foreign Railway News

English Firm Secures Order for Forty Locomotives for India

The East Indian Railway has ordered 40 locomotives of 5 ft. 6 in. gage from the Vulcan Foundry, Ltd., Newton-le-Willows, England. The Vulcan concern secured this order in the face of strong competition from Continental builders, according to the *Times* (London), and secured the order only by making a very low price.

Car Float Service Between England and the Continent

A daily service of train-carrying ferryboats has recently been inaugurated between Zeebrugge, Belgium, and Harwich, England, for the exchange of freight. The service is operated by the Great Eastern Train Ferries, Ltd., an Anglo-Belgian organization capitalized at £400,000.

The ferryboats are propelled by Diesel motors burning heavy fuel oil, and will take eight hours to cross the channel. Although capable of greater speed, this schedule has been agreed on for reasons of fuel economy.

Swedish State Railways Improve in 1923

Reduced operating expenses during 1923 enabled the Swedish State Railways to show better operating results than during the previous year, in spite of the fact that revenue from passenger traffic remained at the same level and that freight earnings declined by more than a million dollars, as the result of rate reductions, according to Commerce Reports. The State Railways, with the exception of the Lulea-State Border, earned a gross of \$46,401,500 compared with \$47,317,200 for the previous year (conversions made at rate of \$0.262 for 1922 and \$0.265 for 1923). Operating expenses totaled \$39,962,000, while in 1922 they amounted to \$43,177,600. The net operating revenue was \$6,439,500, approximately \$2,300,000 more than in 1922. The total financial result for 1923 is in reality a deficit of almost \$2,000,000, because the interest on the state loan during the year amounted to \$8,262,000. Freight traffic increased 10 per cent over the previous year; although there was a slight reduction in the number of passengers carried, the earnings were not affected, owing to the increase in passenger miles. The ore railroad, Lulea-State Border, earned in 1923 a surplus of \$2,597,000, including interest on capital invested amounting to \$32,065,000. The freight volume of this road during 1923 declined to 4,000,000 tons as compared with 4,700,000 tons for 1922.

American Rail Motor Cars Prove

Success on Foreign Railways

Rail motor coaches of American manufacture, in operation on the British section of the Kowloon-Canton railway since 1922 have proved a success, reports Consul Leroy Weber, Hongkong. While this equipment, according to the railway officers, is in the experimental stage, these cars have rendered good service at an economical cost, fulfill the requirements for a light train, for working up new traffic and for development and emergency purposes. The only difficulty encountered in operation has been the delay in securing spare parts and replacements. This should be easily remedied.

The introduction of rail motor cars on the railways of South Australia likewise proved so successful, according to Consul H. H. Balch, Adelaide, that all the states of Australia may adopt this type of passenger vehicle for feeder and short lines in less populous territory. The first 2 of 12 cars ordered from an American company have already arrived and have been installed after successful trial trips. It is said that the Chief Commissioner of Railways plans to purchase about 100 additional rail motor cars for passenger service on the South Australian lines during the next two or three years.

The New South Wales government is experimenting with rail motor cars built in its own shops, but it is understood that the cost is much greater than that of the American cars. The Tasmanian government also has the matter under consideration.

Equipment and Supplies

Locomotives

THE NORFOLK & WESTERN has renewed its inquiry for 10 locomotive tenders.

THE CANADIAN NATIONAL has ordered 6 Mountain type locomotives from the Canadian Locomotive Company.

THE BIKANER STATE RAILWAYS, INDIA, have ordered 5 Mikado type locomotives from the Baldwin Locomotive Works.

Freight Cars

THE WARASH is inquiring for 200 center sill reinforcements.

THE NEW YORK, CHICAGO & ST. LOUIS is inquiring for 100 steel underframes.

THE WESTERN FRUIT EXPRESS will build 1,000 refrigerator cars in its own shops.

THE PHILLIPS PETROLEUM COMPANY is inquiring for 200 tank cars of 8,000 gal. capacity.

THE TEXAS GULF SULPHUR COMPANY is inquiring for 40 tank cars of 10,000 gal. capacity.

THE ATLANTIC FRUIT COMPANY has ordered 8 dump cars from the Magor Car Corporation.

THE CENTRAL OF BRAZIL is inquiring through the car builders for 80 cars of 22 tons' capacity.

THE DETROIT EDISON COMPANY is inquiring for 12 all-steel hopper cars of 50 tons' capacity.

SWIFT & COMPANY are inquiring for 100 steel underframes instead of 1,000, as reported in the *Railway Age* of May 3.

THE EAST BROAD TOP RAILROAD & COAL COMPANY is inquiring for from 25 to 50 steel hopper coal cars, of 35 tons' capacity.

THE GLEN NINA TANK LINE, BUFFALO, N. Y., has given a contract to the Warren Steel Car Company, Warren, Pa., for making heavy repairs to 36 cars.

THE MISSOURI PACIFIC, reported in the *Railway Age* of April 12 as inquiring for 2,000 refrigerator cars, has postponed ordering this equipment for a few months.

THE FLORIDA EAST COAST, reported in the *Railway Age* of March 22 as having authorized the purchase of 100 ballast cars, is now inquiring for this equipment.

Passenger Cars

CENTRAL VERMONT.—See Canadian National.

THE ST. LOUIS SOUTHWESTERN is inquiring for one gas electric motor car.

THE NATIONAL RAILWAYS OF MEXICO are inquiring for 45 standard gage and 40 narrow gage passenger cars.

THE ILLINOIS CENTRAL is contemplating the purchase of 200 suburban cars to be used in connection with electrification.

THE CANADIAN NATIONAL is inquiring for 6 all-steel combination mail and express cars for service on the Central Vermont.

THE VIRGINIA & RAINY LAKE has ordered an Oneida motorized car for use on its lines from the Oneida Manufacturing Company, Green Bay, Wis.

THE BOSTON ELEVATED, reported in the *Railway Age* of April 5 as inquiring for 8 subway cars, has ordered 8 tunnel car bodies from the Pullman Company.

THE NEW SOUTH WALES GOVERNMENT RAILWAYS, SYDNEY, AUSTRALIA, are inquiring in this country for specialties for 150 motor cars and 150 trailer cars. This equipment will be built in England.

THE TEMISKAMING & NORTHERN ONTARIO has ordered through the International Equipment Company, Ltd., Montreal representative of the Railway Storage Battery Car Company, New York, one of its 55-ft. steel combination passenger, smoking and baggage cars to be equipped with Edison batteries, General Electric motors and control and Westinghouse Air Brake equipment.

Iron and Steel

THE NORFOLK & WESTERN is inquiring for 800 tons of steel for bridges.

THE NEW YORK CENTRAL has ordered 900 tons of steel for bridges.

THE BOSTON & MAINE is inquiring for 200 tons of steel for bridges.

THE PENNSYLVANIA has placed orders for 500 tons of steel for bridges.

THE LONG ISLAND has received bids on 800 tons of steel for a transfer bridge.

THE READING COMPANY has placed an order for 300 tons of steel for bridges.

THE CHESAPEAKE & OHIO has placed an order for 600 tons of steel for bridges.

THE PERE MARQUETTE is inquiring for 2,500 tons of structural steel for a car ferry.

THE ILLINOIS CENTRAL is inquiring for 1,500 tons of structural steel for a transfer boat.

THE DELAWARE, LACKAWANNA & WESTERN has placed an order for 100 tons of steel for bridges.

THE VIRGINIAN has ordered 800 tons of structural steel from the Virginia Bridge & Iron Company.

THE CENTRAL OF NEW JERSEY has ordered 8,000 tons of structural steel from the Bethlehem Steel Company. This road is inquiring for 300 tons of structural steel.

Machinery and Tools

THE GREAT NORTHERN is inquiring for one 30-ton 50-ft. boom self-propelling locomotive crane.

THE CHICAGO BELT RAILWAY has ordered one 20-ton, eight-wheel locomotive crane from the Browning Company.

THE FRUIT GROWERS' EXPRESS has ordered three ice handling cranes of 2,400 lb. capacity and with 32 and 39 ft. spans from the Shepard Electric Crane & Hoist Company.

THE UNION PACIFIC is inquiring for the following machine tools:

- 1 cylinder grinder.
- 1 96 in. heavy duty tire mill, swing 100 in.
- 2 extra heavy duty axle lathes.
- 1 90 in. wheel quartering machine with crank pin turning attachment.
- 2 heavy pattern 3 in. by 24 in. double emery grinder.
- 1 portable locomotive cylinder boring bar.
- 1 Universal tool grinding and shaping machine.
- 1 36 in. engine lathe, 9 ft. 6 in. between centers.
- 1 17 in. heavy duty engine lathe, 6 ft. between centers.
- 1 18 in. engine lathe, 6 ft. between centers.
- 1 20 in. engine lathe, 6 ft. 2 in. between centers.
- 1 28 in. heavy duty crank shaper.
- 1 36 in. heavy pattern upright drill press.
- 1 20 in. heavy pattern upright drill press.
- 1 10 in. double end axle cutting off and centering machine.
- 2 32 in. extra heavy duty railroad and manufacturing shapers.
- 1 36 in. by 36 in. by 14 ft. planer with two rail heads and one side head.

OF FIVE THOUSAND passengers landing recently at Montreal and Quebec from Europe, about four thousand, most of whom came from the British Isles, are planning to settle permanently in Canada.

Supply Trade News

The Kalman Steel Company has moved its Chicago office to 410 North Michigan avenue.

R. I. Miner has been appointed consulting engineer of the Youngstown Pressed Steel Company, Warren, O.

The Hutchins Car Roofing Company has moved its Chicago offices to the Straus building, 310 South Michigan avenue.

The Bucyrus Company, South Milwaukee, Wis., is planning the construction of a one-story addition, 30 ft. by 120 ft., to its tool room.

W. R. Toppan has been appointed manager of the newly created railroad department of the Conveyors Corporation of America, manufacturers of cinder and ash handling equipment, with headquarters at Chicago.



W. R. Toppan

Mr. Toppan was born at Newburyport, Mass., and entered the employ of the Galena Signal Oil Company in 1884 as a mechanical inspector, which position he held until 1901, being in charge of this company's service on the Atchison, Topeka & Santa Fe for the last three years of this period. He then entered the employ of the Kennicott Water Softener Company as manager of the railroad department, with headquarters at Chicago, which position he held

until 1905, when he was promoted to general manager of that company. In 1908 he was elected vice-president and general manager of the L. M. Booth Company, with headquarters at Chicago, which position he held until 1916, when he returned to the Kennicott Company as manager of the railroad department. In January, 1917, he entered the employ of the Graver Corporation as manager of the railroad department, with headquarters at Chicago, in which position he directed the sales of that company's water treating facilities to the railways until March 1, 1924, when he resigned.

The Federal Machinery Sales Company, Chicago, has been appointed representative in the Chicago territory for the U. S. Drill Head Company.

The Pittsburgh Testing Laboratory is now occupying its new laboratories and office building at Stevenson and Locust streets, Pittsburgh, Pa.

The Simmons-Boardman Publishing Company has opened an office at San Francisco, California, at 74 New Montgomery street. Homer Beach will be in charge.

Fred J. Mershon, export sales manager of the Industrial Works, has been placed in charge of the Detroit office with headquarters in the Book building, Detroit, Mich.

The Dale Machinery Company, Chicago, has been appointed the representative in the Chicago territory for the Willard Machine Tool Company, manufacturers of engine lathes.

The B. F. Nelson Manufacturing Company, Minneapolis, Minn., manufacturer of roofing, insulating papers and water proof cotton ducks, has moved its Chicago railroad sales office to the Transportation building, 608 S. Dearborn street, Chicago.

Duncan W. Fraser, vice-president in charge of manufacturing and sales, and Joseph B. Ennis, vice-president in charge of engineering, of the American Locomotive Company have been elected directors to fill vacancies.

P. E. Stouffer, assistant to the general sales manager of S. F. Bowser & Company, with headquarters at Ft. Wayne, Ind., has been promoted to assistant manager of the railroad department, with the same headquarters.

N. E. Otterson has been transferred from the New York office of the Osgood Company and has been appointed district sales manager, with headquarters at Chicago, succeeding C. A. Phillips who has resigned to go into business for himself.

The Allis Chalmers Manufacturing Company, Milwaukee, Wis., has acquired the mining, crushing, cement and creosoting department of the Worthington Pump & Machinery Corporation, Cudahy, Wis., and will add the Cudahy works to its main plant at West Allis.

Frank E. McAllister, vice-president and general sales manager of the Kalamazoo Railway Supply Company, Kalamazoo, Mich., has been elected president and general manager to succeed the late John McKinnon. Mr. McAllister has been connected with the company since February 7, 1910. On May 1, 1918, he was made general sales manager, and in January, 1921, was elected vice-president and general sales manager. He has been a director of the company since January, 1914. Joseph E. Brown, who has been a director of the company for a number of years, has been elected vice-president. The other officers of the company remain the same as in the past. D. A. Stewart, treasurer and engineer, and W. N. Sidnam, secretary.



F. E. McAllister

B. J. Wilson, formerly with the Simmons-Boardman Publishing Company at Chicago, has been appointed western representative of the Pocket List of Railroad Officials published by the Railway Equipment & Publication Co., New York. Mr. Wilson's headquarters are at 605 Fisher building, Chicago. He succeeds Leo Ehlbert.

The Smith-Heylandt Company has been organized with a working capital of \$500,000 and offices at 2633 Fourth street, southeast, Minneapolis, Minn. This company will take over the patents, importations sales and distribution of the Hey-

landt apparatus for the manufacture of oxygen and other gases by the Liquefaction process. E. H. Smith, president of Smith's Inventions, Inc., and the Commercial Gas Company, Minneapolis, is president of the new organization and J. R. R. Miles is secretary.

C. H. Smith, assistant secretary of the Westinghouse Air Brake Company, and director of clerical operations of all of that company's interests, has, in addition, been elected vice-president of the Westinghouse Union Battery Company, Swissvale, Pa. This is an important subsidiary of the Westinghouse Air Brake Company, producing Westinghouse storage batteries for a variety of uses. Mr. Smith began his connection with the Air Brake Company in 1900, in the correspondence and order department. In a few years he became head of the department and later was promoted to the position of assistant to the general manager. In 1916 he supervised important war contract work which the company carried on at Providence, R. I., and in 1917 was appointed assistant to the president of the Westinghouse Air Brake Company and the Union Switch & Signal Company. He was made director of clerical operation of all Air Brake interests in 1919. Mr. Smith is an authority on cost accounting and is prominent in the national councils of a number of business organizations, including the National Association of Cost Accountants, the National Association of Manufacturers, the National Tax Association and the National Association of Office Managers.



C. H. Smith

The Computing-Tabulating-Recording-Company, New York, has changed its name to the International Business Machines Corporation. It owns all of the capital stock and properties of the Tabulating Machine Company, the International Time Recording Company and the Dayton Scale Company. The Tabulating Machine Company owns and controls the Hollerith tabulating system. The International Time Recording Company was organized in 1901, and acquired the time recording business of the Bundy Manufacturing Company of Binghamton, N. Y. The Dayton Scale Company is the originator of the computing scale.

Plan to Assist Terminal Improvement Financing

F. J. Lisman & Co., 24 Exchange Place, New York, has announced that it is prepared to assist railways in financing on the installment plan, purchases of new shop machinery and

LOCOMOTIVES ORDERED, INSTALLED AND RETIRED

Month	Domestic ¹ orders reported during month	Installed ² during month	Aggregate tractive effort	Retired during month	Aggregate tractive effort	Owned at end of month	Aggregate tractive effort	On order first of fol- lowing month	Building in R. R. shops
September	8	384	22,342,517	260	7,191,302	64,720	2,506,469,051	1,242	7
October	50	408	21,665,487	301	7,935,709	64,827	2,520,200,846	942	15
November	49	333	19,054,713	282	7,741,395	64,879	2,532,085,380	739	14
December	12	333	18,260,423	316	8,738,378	64,896	2,541,607,425	510	14
Full year 1923.....	1,984*	4,037*	.....	3,672	.....	.....	.....	.....	..
1924									
January	125	271	15,228,895	178	4,447,721	64,989	2,552,694,953	439	14
February	85	214	11,296,088	175	4,906,435	65,029	2,559,519,253	457	10
March	283	176	10,457,064	181	6,033,173	64,911	2,560,076,766	520	7
April	100	...	.....	...	.....	.....	.....	.....	..
Total for 3 months.....	...	661	.....	534	.....	.....	.....	.....	..
Total for 4 months.....	593	...	.....	.....	.....	.....	.....	.....	..

¹Details as to orders from *Railway Age* weekly reports. Figures include all domestic orders placed with builders and railroad shops, but not rebuilt equipment.

²Figures as to installations and retirements prepared by Car Service Division, A.R.A., published in form C. S. 56A-1. Figures cover only those roads reporting to the Car Service Division. They include equipment received from builders and railroad shops. Figures of installations and retirements alike include also equipment rebuilt to an extent sufficiently so that under accounting rules it must be retired and entered in the equipment statement as new equipment. Figure as to orders as given in first column of table is not therefore comparable with figures relating to installations in succeeding columns.

*Corrected figure.

tools or improvements to shops, terminals, etc. In the announcement, F. J. Lisman & Co. says that it was a pioneer 30 years ago in handling equipment trusts before such obligations were as popular as they are today. The company is convinced that great saving in the operation of railroads, can be brought about by the modernizing of shops and division terminals so as to enable the railways to repair to better advantage the heavy equipment of the present day.

Obituary

John Wesley Hathaway, who has been connected with the Union Draft Gear Company, Chicago, for the past 14 years, died on April 23 at Naperville, Ill.

Leigh Best, senior vice-president at New York of the American Locomotive Company, who died on April 27, as was announced in the *Railway Age* of May 3, was born on November 4, 1867, at Chatham, N. Y. After studying law with a Utica firm he entered the legal department of the New York Central where he became assistant to President S. R. Callaway, and when the American Locomotive Company was organized Mr. Callaway went to that company as its first president and took Mr. Best with him as secretary of the American Locomotive Company. Mr. Best subsequently became vice-president of the same company, which position he held at the time of his death. He was also at that time vice-president of the American Locomotive Sales Corporation, the Montreal Locomotive Works, the Richmond Locomotive Works and the Ware Manufacturing Company.



Leigh Best

John McKinnon, president and general manager of the Kalamazoo Railway Supply Company, Kalamazoo, Mich., died suddenly on April 5. He was born in Glasgow, Scotland, on October 3, 1851, and came to America at the age of 20. He spent all his life in railway and railway supply work. Mr. McKinnon was connected at various times with the Vulcan Iron Works, St. Louis, Mo.; Wabash Railway; Morden Frog & Switch Company, Chicago, and the Buda Company, Chicago. He was general manager of the Morden Frog & Switch Company and sales manager of the Buda Company. In the summer of 1905 he went with the Kalamazoo Railway Supply Company as salesman. He was made secretary and general manager in January, 1907, and president and general manager in January, 1912. He was a life member of the Western Society of Engineers. In the past he has been a director of the Track Supply Association and the National Railway Appliance Association.



John McKinnon

Railway Construction

ATCHISON, TOPEKA & SANTA FE.—This company has awarded contracts to Joseph E. Nelson & Sons, Chicago, and to the Sumner-Sollitt Company, Los Angeles, Cal., for the construction of a one-story machine shop, 180 ft. by 215 ft., at San Bernardino, Cal., to cost approximately \$200,000.

ATCHISON, TOPEKA & SANTA FE.—This company contemplates the construction of additions and improvements to its approach tracks in Chicago, between the western city limits and Sixteenth street, at an estimated cost of \$992,000. Plans include the construction of third and fourth main tracks between Kedzie and Wentworth avenues and at other points and a subway under its tracks at Thirty-ninth street.

CANADIAN NATIONAL.—This company plans the construction of 10 tracks, each 2,500 ft. long, at Port Mann, B. C.

CANADIAN PACIFIC.—This company has commenced work on a new storage yard near Papineau avenue, east of Mile End station, Montreal. The new yard will be used to take care of additional export traffic out of Montreal.

CENTRAL OF GEORGIA.—The Interstate Commerce Commission has issued a certificate authorizing the revision of the alignment and grades on the Columbus-Birmingham line between Opelika and Sterretts, Ala., a distance of 100 miles, including a number of changes in location and the construction of 47.55 miles of new track, subject to the condition that a continuous viaduct will be constructed in the town of Childersburg where the line crosses that of the Southern, that a freight and passenger station at that point be relocated and that physical connection be established with the tracks of the Southern.

CENTRAL OF GEORGIA.—This company has awarded a contract to the George B. Swift Company, Chicago, for the construction of a coach and paint shop at Savannah, Ga., at an approximate cost of \$350,000.

CENTRAL OF NEW JERSEY.—This company has awarded a contract to the Bethlehem Steel Bridge Company for four two-track lift spans with silicon steel in the trusses and floor beams for that road's Newark bay bridge. The tonnage involved is about 8,100. The substructure of the lift spans has been awarded to the Arthur McMullen Company, New York.

CHESAPEAKE & OHIO.—This company will close bids on May 22 for the construction of a passenger station at Ashland, Ky.

CHICAGO, BURLINGTON & QUINCY.—This company will close bids on May 15 for the construction of a passenger station at Farmington, Ill.

CHICAGO, NORTH SHORE & MILWAUKEE-ELECTRIC.—This company has acquired a 65-acre tract of land in Waukegan, Ill., on which it plans the immediate construction of shops and other terminal facilities.

DETROIT, TOLEDO & Ironton.—This company plans the construction of a new terminal, including enginehouse, repair shops and related buildings, at South Charleston, Ohio. Land upon which the terminal will be built has already been purchased.

ILLINOIS CENTRAL.—This company has awarded contracts to the Railroad, Water & Coal Handling Company, Chicago, for the construction of a pumping station and the laying of a pipe line near Madisonville, Ky., and for the construction of sand handling facilities and cinder pits at Dubuque, Ia. Through an error, this work was credited to the St. Louis-Southwestern in the *Railway Age* of May 3.

MISSOURI PACIFIC.—This company is preparing plans for the rebuilding of its locomotive and car shops at Fort Scott, Kans., which were damaged by fire recently.

NORFOLK & WESTERN.—This company has awarded contracts for steel work on two bridges in its Cincinnati district to the Mt.

Vernon Bridge Company and for masonry to J. P. Pettyjohn, Lynchburg, Va., and Pitts & Morris, Roanoke, Va., respectively. A contract has been awarded for steel work on another bridge in the same district to the Virginia Bridge & Iron Works, Roanoke, and for masonry work on another to the Walton-Sudduth Company, Bluefield, W. Va. These bridges are estimated to cost respectively \$126,500, \$92,300, \$13,000 and \$57,300. The company has authorized the construction of second main track as follows: Kermit, W. Va., to Crum (9.62 miles), Big Sandy line (\$1,185,000); Wilcoe to Gary (1.49 miles), Tug Fork branch (\$140,000); Tug to Wilcoe (1.45 miles), Tug Fork branch (\$130,000).

PENNSYLVANIA.—This company has awarded contracts to the Chicago Bridge & Iron Works, Chicago, for the erection of a 200,000-gal. steel water tank with crane at Effingham, Ill., and a 300,000-gal. steel water tank at Indianapolis, Ind.

READING.—This company has awarded a contract for the construction of a coal yard at Pleasantville, N. J., to the Curtis-Grindrod Company, Philadelphia.

ST. LOUIS-SAN FRANCISCO.—This company has awarded a contract to Cagle & O'Connell, Tulsa, Okla., for the construction of a passenger station at Bristow, Okla., reported in the *Railway Age* of March 22.

SOUTHERN PACIFIC.—This company has completed plans for the construction of a freight car repair plant at Houston, Tex., and will begin construction at once. The repair plant and tracks will cover an area of 30 acres which will be filled in to uniform elevation. Two repair yards will be built, one for heavy repairs with a capacity of 130 cars and the other for light repairs with a capacity of 191 cars. These yards will contain a total of approximately 45,000 ft. of track. The shop building for heavy repairs will be 400 ft. long and will accommodate four tracks. A shop and mill building, 208 ft. by 40 ft., will also be constructed. Plans also include a shop with 3,200 sq. ft. of floor area which will be used for preparing and assembling wheels and axles. This building will be equipped with boring mills, lathes and wheel presses and will have a depressed track with a concrete platform and mechanical equipment for handling wheels, axles and other heavy parts. Store and supply buildings will also be constructed. The buildings will be of slow burning mill construction covered with asbestos protected metal. The mill will be equipped with automatic sprinkler system and a complete air service system will be installed for the operation of compressed air tools. Construction is to be completed this year.

RED CEDAR EDGE GRAIN SHINGLES to the number of 12,000,000 were shipped recently from Vancouver, British Columbia over the Canadian Pacific to Chicago and other eastern points, 60 carloads in all. These shingles are said to have become very popular in the United States, and shipments of other trainloads are to follow.



Chinese Taking Course of Instruction at Point St. Charles Shops of Canadian National

Railway Financial News

ANN ARBOR.—*New Director.*—W. D. Hutton, of New York, has been elected a director. This is the first change in the board of directors since it became known that the Jules S. Bache interests had gained control of the property.

BUFFALO & SUSQUEHANNA.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income of \$852,866 as compared with \$729,352 in 1922. The income statement compares as follows:

	1923	Increase or Decrease
Freight revenue	\$2,671,292	\$1,108,198
Passenger revenue	61,230	—3,472
Total operating revenues	2,789,877	1,104,833
Maintenance of way and structures	582,967	198,669
Maintenance of equipment	1,060,430	513,970
Traffic	26,721	1,099
Transportation	862,095	254,708
General	120,159	7,839
Total operating expenses	2,652,044	975,956
Net operating revenue	128,833	128,877
Tax accruals	147,990	74,118
Operating income	Def. 19,159	54,891
Gross income	1,108,764	118,471
Total deductions	255,899	—5,043
Net income	852,866	123,513
Income applied to sinking fund	44,947	6,856
Income balance transferred to Profit and Loss	807,919	116,658

CENTRAL OF GEORGIA.—*Annual Report.*—This company's annual report for 1923 is reviewed in an article on another page of this issue entitled "Central of Georgia Spectacular Traffic Increase." See also excerpts from annual report on adjacent pages.

CENTRAL OF NEW JERSEY.—*Equipment Bonds.*—The Interstate Commerce Commission has authorized an issue of \$1,370,000 of 5 per cent equipment bonds to be sold at not less than 98.75.

CENTRAL NEW YORK SOUTHERN.—*Abandonment.*—The Interstate Commerce Commission has issued a certificate authorizing this company to abandon, as to interstate and foreign commerce, its line (Electric) from Auburn to Ithaca, N. Y., 37 miles. Automobiles on the highway have made the business of the railway unprofitable.

CHICAGO, BURLINGTON & QUINCY.—*New Directors.*—Louis W. Hill and E. M. Sheldon have been elected directors.

CHICAGO, ROCK ISLAND & PACIFIC.—*New Director.*—A. A. Cook has been elected a director.

COLORADO, WYOMING & EASTERN.—*New Company.*—See Northern Colorado & Eastern.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Annual Report.*—The annual report for the year ended December 31, 1923, shows a net income before dividends of \$169,470 as compared with \$189,014 in 1922. The income account compares as follows:

	1923	1922
Miles operated	89	89
Freight revenue, steam division	\$569,014	\$487,220
Passenger revenue, steam division	51,811	42,105
Passenger revenue, electric division	778,124	816,465
Total operating revenues	1,471,219	1,409,648
Maintenance of way and structures	165,596	166,202
Maintenance of equipment	157,015	129,941
Traffic expenses	7,581	9,187
Power	88,571	74,870
Transportation	394,410	368,181
General	85,523	82,100
Total operating expenses	898,695	830,481
Net revenue from railway operations	572,524	579,167
Railway tax accruals	94,713	76,265
Railway operating income	477,811	502,903
Total operating income	499,249	521,343
Gross income	561,728	571,657
Total deductions	392,259	382,642
Net income	169,470	189,014
Total dividends for year (preferred stock)	30,000	30,000
Balance to Profit and Loss	139,470	159,014

FRANKFORT & CINCINNATI.—*Authority for Abandonment Denied.*—The Interstate Commerce Commission has denied this company's application for authority to abandon its line from Frankfort to Georgetown, Ky., 40.8 miles. The reasons given for the application were that its revenues have been inadequate because of the increasing use of automobiles and motor trucks and the closing

(Continued on page 1186)

Annual Reports

The Chesapeake and Ohio Railway Company—Forty-sixth Annual Report

RICHMOND, Va., March 31, 1924.

TO THE STOCKHOLDERS:

The Forty-sixth Annual Report of the Board of Directors, for the fiscal year ended December 31, 1923, is herewith submitted.

The average mileage operated during the year was 2,552.7 miles, an increase over the previous year of 3.6 miles. The mileage at the end of the year was 2,552.9 miles, an increase of 2.2 miles over mileage on December 31, 1922.

RESULTS FOR THE YEAR.

Operating Revenues	\$101,975,797.68
(Increase \$18,464,236.66, or 122.11%)	
Operating Expenses	78,889,776.46
(Increase \$12,771,746.62, or 19.32%)	
Net Operating Revenue	\$23,086,021.22
(Increase \$5,692,490.04, or 32.73%)	
Taxes and Uncollectible Railway Revenue	4,716,669.98
(Increase \$1,404,265.78, or 42.39%)	
Railway Operating Income	\$18,369,351.24
(Increase \$4,288,224.26, or 30.45%)	
Net Equipment and Joint Facility Rents	766,004.37
(Increase \$436,801.50, or 132.68%)	
Net Railway Operating Income	\$19,135,355.61
(Increase \$4,725,025.76, or 32.79%)	
Miscellaneous Income	2,216,048.22
(Decrease \$262,454.77, or 10.59%)	
Total Gross Income	\$21,351,403.83
(Increase \$4,462,570.99, or 26.42%)	
Rental and Other Payments	380,765.58
(Increase \$11,544.79, or 3.13%)	
Income for the year available for interest	\$20,970,638.25
(Increase \$4,451,026.20, or 26.94%)	
Interest (57.18% of amount available) amounted to	11,991,207.73
(Increase \$1,995,265.72, or 19.96%)	
Net Income for the year	\$8,979,430.52
(Increase \$2,455,760.48, or 37.64%)	
Dividend of 6½% on Cumulative Convertible Preferred Stock, Series A, aggregating	816,302.50
Net Income equivalent to 12.48% of Common Stock Outstanding	\$8,163,128.02
Common Stock Dividend—two of 2% each, aggregating	2,591,031.79
Remainder, devoted to improvement of physical and other assets	\$5,572,096.23

RETURN ON PROPERTY.

The following table shows the amount of return to your Company, including subsidiary companies, from transportation operations only, upon its investment in road and equipment at the termination of each year of the five year period ended December 31, 1923, and the average for the five years:

	† Property Investment	Net Railway Operating Income	Percentage of Return
Year ended December 31, 1923..	\$329,703,287.00	\$19,135,355.61	5.80%
Year ended December 31, 1922..	313,102,488.50	14,410,329.85	4.60%
Year ended December 31, 1921..	308,004,741.01	13,660,926.20	4.44%
*Year ended December 31, 1920..	294,686,412.65	14,410,821.80	4.89%
*Year ended December 31, 1919..	291,042,054.93	13,725,866.83	4.72%
Yearly average for five years ended December 31, 1923.....	\$307,307,796.82	\$15,068,660.06	4.90%

† Does not include Material and Supplies and Cash on hand during year.

* The road having been operated in 1919, and during January and February, 1920, by the United States Railroad Administration, the compensation payable during the period mentioned has been used in lieu of operating and other items making up the return for transportation operations. In these computations, interest payable by way of compensation for additions and betterments completed during Federal control has been excluded.

FINANCIAL

In the Annual Report for the year 1922, your Company announced that arrangements had been made to purchase the following locomotives and cars:

- 2 Class J-2 Mountain Type Passenger locomotives;
- 6 Class F-17 Pacific Type Passenger locomotives;
- 25 Class H-6 Compound Mallet freight locomotives;
- 25 Simple Mallet freight locomotives;
- 2,000 70 Ton Steel Coal Cars;

at an approximate cost of \$9,844,825. Equipment Trust, Series "U," was created during the year under which 5 per cent Equipment Trust Certificates were issued to the aggregate principal amount of \$7,875,000, an amount sufficient to provide approximately 80 per cent of the total cost of the above mentioned equipment. These Certificates dated March 15, 1923, will be due March 15, 1938, and provides for an annual payment of \$525,000 on March 15th of each year commencing with 1924.

The program of additions, betterments and improvements, financed in a large part by the issue of preferred stock, referred to in the annual report for 1922, has proceeded rapidly during the year. Much of this work was completed and put in operation during the year and the major portion of that remaining will be completed during the year 1924.

Attention is called in the table showing "Changes in funded debt in the hands of the public" to the retirement of 5 per cent Convertible Secured Gold Bonds, amounting to \$2,106,500. In accordance with Trust Indenture, dated April 1, 1916, between your Company and the Central Union Trust Company of New York, these Bonds were convertible into Stock up to April 2, 1923, at \$80.00 per share and accordingly there was issued Common Capital Stock to a par value of \$2,633,125 to the holders of the Convertible Bonds retired. This increases the amount of Common Capital Stock outstanding as of December 31, 1923, to \$65,425,725.

The changes in funded debt in the hands of the public during the year were as follows:

4 per cent Big Sandy Railway First Mortgage Bonds.....	Retired \$51,000.00
4 per cent Coal River Railway First Mortgage Bonds.....	30,000.00
4 per cent Greenbrier Railway First Mortgage Bonds.....	5,000.00
5 per cent Kanawha Bridge and Terminal Co. First Mortgage Bonds.....	5,000.00

4 per cent Raleigh and Southwestern Railway First Mortgage Bonds.....	1,000.00
5 per cent Convertible Secured Gold Bonds.....	2,106,500.00
Equipment Trust Obligations.....	2,588,800.00

Decrease \$4,787,300.00

Increase in obligations shown under funded debt on balance sheet of December 31, 1923, were as follows:

5 per cent Equipment Trust Certificates—Series "U".....	\$7,875,000.00
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GENERAL REMARKS

Branch Line Extensions during the year have been as follows:

Logan Division, Extension from Mallory No. 2 Coal Mines to West Gilbert, W. Va., increase.....	2.2 Miles
Additional second track mileage put into operation during the year is as follows:	
Big Sandy Division—Big Sandy Junction, Ky., to Hampton, Ky.....	1.08 Miles
Clifton Forge Division in West Virginia—Elimination of second track—(Gauntlet) Second Creek Tunnel.....	.45 Miles

making total increase in second track..... .63 Miles

Third track mileage increased by:

West End Catlettsburg, Ky., to east end of Ashland, Ky.....	2.39 Miles
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The equipment inventory as of December 31, 1923, was as follows:

	Increase	Decrease
Locomotives owned.....	749	46
Locomotives leased.....	182	34
Total.....	931	12
Passenger Train Cars owned.....	366	11
Passenger Train Cars leased.....	101	63
Total.....	467	52
Freight Train and Miscellaneous Cars owned.....	33,091	8,095
Freight Train Cars leased.....	19,220	7,449
Total.....	52,311	646

The changes during the year in the accrued depreciation of equipment account were as follows:

Balance to credit of account December 31, 1922.....	\$16,346,210.35
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Amount credited during year ended December 31,

1923, by charges to	
Operating Expenses.....	\$2,284,530.46

Charges to account, for:

Accrued depreciation on equipment: 8,163 freight train and work cars; 9 passenger train cars;

46 locomotives; 3 floating equipment retired during year; and 2,268 freight train cars; 10 locomotives and 2 floating equipment rebuilt..

\$3,038,915.65	\$754,385.19
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Balance to credit of account December 31, 1923.....

locomotives and 2 floating equipment rebuilt..	\$3,038,915.65	\$754,385.19
Balance to credit of account December 31, 1923.....		\$15,591,825.16

The revenue coal and coke tonnage was 35,377,871, an increase of 24.0 per cent; other freight tonnage was 12,571,623, an increase of 33.7 per cent.

Total revenue tonnage was 47,949,494 tons, an increase of 26.4 per cent.

Freight revenue was \$85,202,379.50, an increase of 24.1 per cent. Freight train mileage was 10,944,416 miles, an increase of 30.2 per cent. Revenue ton miles were 12,909,457,276, an increase of 29.1 per cent. Ton mile revenue was 6.60 mills, a decrease of 3.9 per cent. Revenue per freight train mile was \$7.785, a decrease of 4.7 per cent. Revenue tonnage per train mile was 1,180 tons, a decrease of .8 per cent; including Company's freight, the tonnage per train mile was 1,236 tons, a decrease of 1.3 per cent.

Tonnage per locomotive mile, including Company's freight, was 1,105 tons, a decrease of .5 per cent. Revenue tonnage per loaded car was 39.3 tons, a decrease of .3 per cent. Tons of revenue freight carried one mile per mile of road were 5,057,178, an increase of 28.9 per cent.

While the increase in coal and coke tonnage carried was 24 per cent, the increase in coal and coke freight revenue was 24.5 per cent, notwithstanding rates were reduced 10 per cent on July 1, 1922, due to the fact that Tidewater coal tonnage increased from 2,972,527 tons in 1922 to 4,965,367 tons in 1923, an increase of 67 per cent, and the total eastbound coal tonnage increased from 6,112,908 tons in 1922 to 9,217,566 tons in 1923, an increase of 50.8 per cent. The revenue on Tidewater coal and on eastbound coal generally is higher than on westbound coal. Tonnage of freight traffic other than coal and coke increased 33.7 per cent, whereas the revenue therefrom increased only 23.3 per cent, showing the effect of reduction in freight rates and heavy increases in tonnage of lumber, brick, gravel, sand, stone and other building materials carried at relatively lower freight rates.

There was a slight reduction in the revenue tons per train mile due to the disproportionate increase in eastbound coal shipments and to the large increase in tonnage of commodities other than coal.

There were 7,430,827 passengers carried, an increase of 11.7 per cent. The number carried one mile was 334,582,773, an increase of 10 per cent.

Passenger revenue was \$11,650,940.65, an increase of 10.1 per cent. Revenue per passenger per mile was 3.482 cents, an increase of .1 per cent. Number of passengers carried one mile per mile of road was 136,771, an increase of 9.8 per cent. Passenger train mileage was 5,562,898, an increase of 5.5 per cent. Passenger revenue per train mile was \$2.094, an increase of 4.3 per cent; including mail and express it was \$2.472, an increase of 4.6 per cent. Passenger service train revenue per train mile was \$2.527, an increase of 4.2 per cent.

Operating Expenses increased \$12,771,746.62, or 19.3 per cent. Transportation Expenses increased \$3,894,553.04, or 13.1 per cent. Ratio of Transportation Expenses to Operating Revenues was 33.07 per cent in 1923, and 35.72 per cent in 1922. The revenue ton miles carried increased 29.1 per cent. The increase of 33.7 per cent in tonnage of freight other than coal and coke, which is handled in fast freight trains, and the increase of 50.8 per cent in eastbound coal tonnage, which encounters heavier grades than the westbound coal tonnage, tended to increase transportation expenses in relation to net ton miles.

There were 28,891.9 tons of new rail (10,793.6 tons 130 lb., 15,716.8 tons 100 lb., 2,381.5 tons 90 lb.) equal to 169.7 miles of track, used in renewal of existing track.

There were 1,131,893 cross ties used in maintaining existing tracks, a decrease of 101,857.

There were 884,210 yards of ballast (478,539 yards stone) used in maintaining existing tracks, an increase of 184,462 yards.

The roadway, track and structures were maintained in general good condition throughout the year.

The average amount expended for repairs per locomotive was \$8,555.75, an increase of 29.4 per cent over 1922; per passenger train car \$1,796.50, a decrease of 8.3 per cent; per freight train car \$230.93, an increase of 3.7 per cent. The increase in the average amount expended per locomotive was due to increased business, requiring more intensive use of locomotives and improvement in the general condition of motive power. There was also an increase of 3.5 per cent in the average tractive power of locomotives in service. The increase in the average amount expended per freight train car was due to improvement in the general condition of equipment.

During 1922 contracts were made for repairing 6,290 freight cars and 34 locomotives at outside shops at approximate total cost of \$5,126,124, of which approximately \$1,100,000 was charged to operating expenses during the year 1922 and the remainder during the current year. 5,165 of the freight cars and 24 of the locomotives covered by these contracts were repaired and restored to service during the year. 8,103 freight train cars were retired from service and 1,935 coal cars were retired and rebuilt, causing a total charge to operating expenses of \$3,533,242.75. 46 obsolete locomotives were retired from service causing a charge to operating expenses of \$277,943.40. The Company's locomotive and car shops were worked to full capacity throughout the year in addition to the work done under contract and the general condition of the equipment was materially improved. On December 31, 1922, 6,476 freight cars, or 12.2 per cent of the number owned were out of service for heavy or general repairs, while at the close of the year 1923 only 1,112 freight cars, or 3.3 per cent of the total were out of service for heavy or general repairs. There were 140 locomotives, or 14.8 per cent at the beginning of the year and only 107 locomotives, or 11.5 per cent, at the close of the year undergoing or awaiting classified repairs.

In the month of October, 1923, 3,488,692 tons of bituminous coal were shipped as revenue freight, which exceeded by 12 per cent, the highest previous record, in the month of June, 1922. The revenue tonnage of coal and coke carried during the year exceeded by 22 per cent the previous high record of the year 1920.

In the annual report for 1922 it was stated that public hearings would be held before the Interstate Commerce Commission during the year 1923 relating to the tentative plan of the Commission for the consolidation of the Railway properties of the United States into a limited number of systems. This tentative plan provides for the consolidation of the property of the Virginian Railway Company with that of your Company and the Hocking Valley Railway Company. The Norfolk and Western Railway Company and others presented evidence in support of their contention that the Virginian Railway should be consolidated with the Norfolk and Western instead of with the Chesapeake and Ohio. The officers of your Company presented evidence in support of the tentative plan of the Commission.

As of December 11th, 1923, by authority of your Board of Directors, a final settlement was made with the Director General of Railroads covering operations during the period of Federal Control, in accordance with the contract between The Chesapeake and Ohio Railway Company and its subsidiary companies with the Director General, dated February 28th, 1920. Under this settlement your Company agreed to pay to the Director General the net sum of \$7,000,000 in final settlement. The Director General, however, agreed to fund indebtedness for Additions and Betterments made to the property during the period of Federal Control to the extent of \$9,200,000, thus releasing to your Company \$2,200,000, in cash. The \$9,200,000, so funded will mature March 1st, 1930, and will be secured by pledge of certain of your Company's treasury securities. Negotiations for the final completion of the funding transaction have not, as of December 31st, 1923, been completed, therefore, your Balance Sheet shows, under the caption, "Working Liabilities" the net amount of \$7,000,000 due to the Railroad Administration. The adjustments necessary to account for this final settlement have been included in the accounts for 1923 and reflect a net credit to Profit and Loss of \$3,283,997.87.

Your Company has, through its Public Relations Department, endeavored to cultivate as close an association with the people along the line of its road as it is practicable for it to do. Our purpose has been to show clearly and definitely the railroad situation, and convince people that it is of far

GENERAL BALANCE SHEET DECEMBER 31, 1923.

ASSETS.		LIABILITIES.	
(Excluding Stocks and Bonds owned of The C. & O. Ry. Co. of Indiana and of The C. & O. Equipment Corporation.)		(Excluding Stocks and Bonds owned of The C. & O. Ry. Co. of Indiana and of The C. & O. Equipment Corporation.)	
TABLE 3.		Capital Stock.	
Property Investment.		Common	
Cost of Road	\$219,255,753.65	6½% Cumulative Convertible Preferred	\$65,425,725.00
Cost of Equipment	101,400,191.97	Stock—Series "A"	12,558,500.00
		First Preferred (To be retired under plan	
		of Feb. 23, 1892)	3,000.00
		Second Preferred (To be retired under plan	
		of Feb. 23, 1892)	200.00
			\$77,987,425.00
Improvements on Leased Railway Property	\$320,655,945.62	Common—The Chesapeake and Ohio Railway Co. of Indiana	1,200.00
Securities of Proprietary, Affiliated and Con-	40,716.21		\$77,988,625.00
trolled Companies—Pledged.			
Stocks	\$11,213,999.44		
Bonds	2,500,002.00		
	\$13,714,001.44		
Other Investments—Pledged.			
Bonds	385,000.00		
Securities—Issued or Assumed—Pledged.			
Bonds	62,274,001.00		
(Includes First Lien and Improvement 5%	76,373,002.44		
Mortgage Bonds \$62,274,000.00. See			
Contra.)			
Miscellaneous Investments.			
Physical Property	446,905.60		
Special Funds, and Funded Debt Issued and			
Reserved.			
R. & S. W. Ry. Co., First Mortgage Bonds			
—Reserved for Construction	\$40,000.00		
Potts Creek Branch—Cash	56,482.06		
	\$76,916,390.10		
	\$397,613,051.93		
Working Assets.			
Cash in Treasury	\$4,318,838.18		
Cash in Transit	1,092,776.84		
	\$5,411,615.02		
Cash Deposit—Equipment Trust "U" Funds	2,083,156.86		
*Cash Deposit—Preferred Stock—Series "A"			
Proceeds	8,467,394.49		
Cash Deposit—Special Fund for Additions			
and Betterments, New Equipment and			
Maintenance of Equipment Reserve	3,262,183.90		
Cash deposits to pay Interest and Dividends	2,172,402.52		
Miscellaneous Cash Deposits	3,000.00		
Loans and Bills Receivable	76,066.01		
Traffic Balances	2,813,560.56		
Agents and Conductors	1,339,157.03		
Miscellaneous Accounts Receivable	2,211,887.82		
Other Working Assets	27,062.80		
	\$27,867,487.01		
Material and Supplies	10,840,335.14		
Securities in Treasury—Unpledged.			
Stocks	\$5,647,652.98		
Bonds	8,078,848.46		
	13,726,501.44		
Deferred Assets.			
Unmatured Interest, Dividends and Rents.	\$1,160,271.44		
Advances to Proprietary, Affiliated and			
Controlled Companies	1,396,923.95		
Advances, Working Funds (Fast Freight			
Lines, etc.)	11,523.22		
Special Deposits with Trustees, Various			
Mortgage Funds	596,738.26		
Cash and Securities in Sinking Funds	239,362.73		
Cash and Securities in Insurance Reserve			
Fund	121,634.39		
Sundry Accounts	3,004,223.83		
	6,530,677.82		
	\$58,965,001.41		
Total	\$456,578,053.34		

*—Represented in part by U. S. Government Treasury Notes.

Deferred Liabilities.			
Unmatured Interest and Rents	\$2,911,011.56		
Insurance and Casualty Reserves	121,634.39		
Taxes Accrued	2,373,673.25		
Accrued Depreciation—Equipment	15,591,825.16		
Sundry Accounts	4,984,104.86		
		25,982,249.22	
		44,867,311.14	

Appropriated Surplus.	
Additions to Property through Income and Surplus	\$24,941,996.83
Reserve Invested in Sinking Funds.....	239,362.73
Funded Debt Retired Through Income and Surplus	378,826.28
	\$25,560,185.84
Profit and Loss—Balance.....	29,003,807.39
	\$54,563,993.23
Total	\$456,578,053.34

This Company is also liable as a guarantor of the following securities:

Western Pocahontas Fuel Co. Coupon 5% Notes, Due 1919 and 1921 (\$500,000 each year), owned by this Company.	\$1,000,000.00
The Chesapeake and Ohio Grain Elevator Co., First Mortgage 4% Bonds due 1938.....	820,000.00
Richmond-Washington Co. Collateral Trust Mortgage (C. & O. prop'n $\frac{1}{2}$) 4% Bonds due 1943.....	10,000,000.00
Louisville and Jeffersonville Bridge and Railroad Co. Bills Payable (C. & O. prop'n $\frac{1}{2}$) 6% Notes due 1931.....	147,000.00
Louisville and Jeffersonville Bridge and Railroad Co. Mortgage (C. & O. prop'n $\frac{1}{2}$) 4% Bonds due 1945.....	4,500,000.00
Western Pocahontas Corporation, First Mortgage 4 $\frac{1}{2}$ % Bonds due 1945	750,000.00
Western Pocahontas Corporation, Extension Mortgage No. 1, 4 $\frac{1}{2}$ % Bonds due 1945.....	97,000.00
Western Pocahontas Corporation, Extension Mortgage No. 2, 4 $\frac{1}{2}$ % Bonds due 1946.....	51,000.00
Norfolk Terminal and Transportation Co., First Mortgage 5% Bonds due 1948.....	500,000.00

greater importance to have good railroad facilities than to make any practicable reduction in rates. For this purpose it has been strenuously argued that no action should be taken to prevent the railroads building up their facilities in such a way as will enable them to render the best possible service. It is gratifying to observe that this has had some effect on those to whom these arguments have been addressed and that real, practical results have come from these efforts. It has been attempted to put the arguments in simple, understandable shape, so that they might be divested of any technical cloudiness.

During the year, an extension of three miles to the Elk Creek Branch of Logan Division, from Wylo, W. Va., was completed, making this branch six miles in length.

An extension of about one mile up Clear Fork of Coal River from Colcord, W. Va., was completed.

A section of second track on Big Sandy Division from Big Sandy Junction to Hampton, a distance of 1.08 miles, was completed and put in operation.

A large program for improving the water supply was undertaken and the following works are now rapidly approaching completion:

Strathmore, Va., 100,000 gallon tank and pumping station; Huntington, W. Va., water treating plant; Sproul, W. Va., 100,000 gallon tank and oil burning pumping plant; Whitesville, W. Va., 100,000 gallon water station; Brushton, W. Va., 100,000 gallon water station; Ranger, W. Va., replacing 50,000 gallon wooden water tank and steam pumps with 150,000 gallon steel tank and oil burning pumping equipment with concrete pit and intake; Logan, W. Va., 6-inch gravity pipe line from treating plant at Peach Creek to tank at Logan; Peach Creek, W. Va., pumping plant; Taplin, W. Va., water station, and water treating plants at Russell, Ky., Edgington, Ky., So. Portsmouth, Ky., Maysville, Ky., Foster, Ky., Wheeler, O., and Robbins, O.; water treating plant was constructed and put in operation at Cane Fork, W. Va., and soda ash treating facilities installed at West Hamlin, W. Va., Ranger, W. Va., and Big Creek, W. Va., 50,000 gallon water tanks were constructed at Sabert, Va., Paint Creek (Scale Yard), W. Va.,

Ethel, W. Va., and Garrison, Ky., and 100,000 gallon water tank at Taplin, W. Va.

A great many improvements were started during the year which have not been completed—Some of the more important projects are:

Newport News, Va., construction storage yard east of Pier No. 9 to hold 1,500 cars.

Fulton, Va., extension of five tracks in eastbound yard to hold 100 car trains, which will be completed early this year.

Clifton Forge, Va., new freight terminal consisting of a receiving yard and a classification and forwarding yard for eastbound business. The receiving yard will include ten 100 car tracks a double track hump with scales in each track and two main lines and thoroughfare track. The classification yard will include twenty tracks to hold 100 car trains, two main lines and a car rider track. This project will cost more than \$3,500,000. The work should be completed the latter part of 1924.

Covington, Va., the reduction of "Paynes Grade"—a distance of 2.3 miles, between Covington, Va., and Steele, Va., from 0.4% ascending eastward and 1.13% ascending westward to level grade which will increase the tons per train in both directions. This work will be completed in summer of 1924.

The installation of new 115 ft. twin span turntables at Alleghany, Va., and Hinton, W. Va., to turn the heavier engines assigned to this territory. These tables will be completed early next year.

Montgomery, W. Va., the construction of a modern up to date passenger station, which will be completed early next year.

Ashland, Ky., improvements and extension of transportation facilities, including new passenger station, construction of yard and other tracks and a third main track between Ashland and Russell, Ky., and a 200 ton track scale. This is a large and important improvement, will cost approximately \$2,500,000 and the work will extend through next year into 1925.

The construction of second track on Big Sandy Division between Hampton and Lockwood, Buffalo Tunnel and Auxier and Fergo and Shelby. The authorizations for this second track amount to \$1,250,000 and cover the construction of 14.1 miles new second track. This work should be completed late in 1924.

Russell, Ky., extension of switching lead from eastbound yard about one mile, transfer tracks, flood lighting in yard, connecting old and new westbound receiving yard, re-arranging engine house tracks, 10 additional tracks in westbound yard, 800 ton reinforced concrete coaling station. This work will cost in the neighborhood of \$800,000 and will extend well into 1924.

On the Northern Division second track is being constructed between Robbins and Gregg 1.5 miles, passing siding at Robbins to hold 100 car trains and 300 ton frame coaling station at Robbins. This work will extend well into 1924.

In addition, side and yard tracks are being constructed at various points; also other miscellaneous improvements are being made to properly handle the increasing business of the Company.

Among the new local industries were the following:

4 manufacturers of farm implements and farm products.

4 manufacturers of lumber and lumber products.

14 manufacturers of mineral, metal and other products.

Mr. R. N. Begien was elected Vice-President in charge of Operation, effective June 1, 1923.

Mr. H. T. Wickham, who had for a number of years been Vice-President and General Counsel of this Company requested that he be relieved of the heavier burdens of his office and his resignation as Vice-President and General Counsel was accepted by the Board of Directors, effective September 15, 1923. Mr. Wickham was prevailed upon to remain in the Company's service as Advisory Counsel, in which position he is rendering valuable service.

Mr. H. Fitzpatrick, who had also been in the service of the Company for a number of years was elected to succeed Mr. Wickham as Vice-President and General Counsel, effective September 15, 1923.

Your Directors acknowledge the great appreciation of the Company for the faithful and efficient services of its officers and employees.

By order of the Boards of Directors, W. J. HAKAHAN, President.
O. P. VAN SWERINGEN, Chairman.

[ADVERTISEMENT]

The Hocking Valley Railway Company—Twenty-fifth Annual Report

Columbus, Ohio, March 18, 1924.

To the Stockholders:

The Twenty-fifth Annual Report of the Board of Directors, for the fiscal year ended December 31, 1923, is herewith submitted.

The average mileage operated during the year was 348.57 miles, a decrease compared with previous year of .24 miles. The mileage at end of the year was 348.57 miles. See schedule on page 10.

RESULTS FOR THE YEAR.

Operating Revenues	\$17,563,402.40
(Increase \$3,707,938.45 or 26.76%.)	
Operating Expenses	14,027,189.12
(Increase \$3,280,055.96 or 30.52%.)	
Net Operating Revenue.....	\$3,536,213.28
(Increase \$427,882.49 or 13.77%.)	
Taxes and Uncollectible Railway Revenue.....	1,075,383.14
(Increase \$95,664.85 or 9.76%.)	
Railway Operating Income.....	\$2,460,830.14
(Increase \$332,217.64 or 15.61%.)	
Net Equipment and Joint Facility Rents	6,762.50
(Decrease \$123,216.96 or 105.81%.)	
Net Railway Operating Income.....	\$2,454,067.64
(Increase \$209,000.68 or 9.31%.)	
Other Income	289,558.10
(Increase \$36,296.70 or 14.33%.)	
Total Gross Income.....	\$2,743,625.74
(Increase \$245,297.38 or 9.82%.)	
Rentals and Other Payments.....	81,309.31
(Increase \$5,961.30 or 7.91%.)	
Income for the year available for interest.....	\$2,662,316.43
(Increase \$239,336.08 or 9.88%.)	
Interest (65.34% of amount available).....	1,739,476.17
(Increase \$2,458.02 or 0.14%.)	
Net Income for the year.....	\$922,840.26
(Increase \$236,878.06 or 34.53%.)	
Dividends paid during the year:	
Two dividends of 2% each, aggregating.....	439,980.00
Balance, devoted to improvement of physical and other assets,	\$482,860.26

RETURN ON PROPERTY

The following table shows the amount of return to your Company, from transportation operations only, upon its investment in road and equipment

at the termination of each year of the five year period ended December 31, 1923. The road having been operated in 1919 and January and February 1920 by the United States Railroad Administration, the Compensation payable by the Government has been used for 1919 and for January and February 1920 in lieu of the operating and other items corresponding therewith:

Year Ended December 31:	Property Investment	Total Operating Income (including hire of equipment and other items.)	Per Cent of Return
1923	\$55,956,903.23	\$2,424,784.65	4.33
1922	54,605,768.30	2,213,542.68	4.05
1921	54,329,923.35	1,532,557.63	2.82
1920	53,356,347.92	1,802,110.54	3.38
1919	49,036,318.18	2,425,691.11	4.95
Average	\$53,457,052.20	\$2,079,737.32	3.89

FINANCIAL.

The changes in funded debt shown by balance sheet of December 31, 1923, as compared with December 31, 1922, consisted in the payment of \$369,000 on equipment trusts; and in the sale of \$4,020,000 face amount of equipment trust obligations to provide approximately 80% of the funds for the purchase of 2,000 steel coal cars of 70-ton capacity, of which 1,366 cars were received prior to the end of the year.

An analysis of the property accounts will be found on pages 14 and 15, by reference to which it will be seen that additions and betterments were made during the year to the net amount of \$1,339,399.35, of which \$172,316.55 was added to cost of road, and \$1,167,082.80 was added to cost of equipment.

During the past fifteen years your Company's net addition to property accounts has been as follows:

Equipment	\$8,913,158.80
Additions and Betterments.....	8,737,107.59
	\$17,650,266.39

GENERAL REMARKS.

The equipment in service December 31, 1923, consisted of:

Locomotives owned	134 Increase	5
Locomotives leased under equipment trusts.....	20 Decrease	8
Locomotives held under other form of title.....	10 No change	

Total.....	164 Decrease	3
Passenger train cars owned.....	72 No change	
Freight train and miscellaneous cars owned.....	9,426 Decrease	2,705
Freight train cars leased under equipment trusts....	2,862 Increase	364
Freight train cars under special trust.....	47 No change	

Total freight train and miscellaneous cars... 12,335 Decrease 2,341

The changes during the year in accrued depreciation of equipment were as follows:

Balance to credit of account December 31, 1922.....	\$4,399,540.68
Amount credited by charges to operating expenses..	\$481,884.02
Charges to account, for:	
Accrued depreciation on equipment	
retired during year—3 locomotives	
3,707 freight and work cars and 1	
Ford motor truck.....	\$737,028.38
Accrued depreciation on cars changed	
in class during year.....	1,555.47
	<u>738,583.85</u>
	256,699.83

Balance to credit of account December 31, 1923..... \$4,142,840.85

Coalport trestle, near Pomeroy, was filled and converted into embankment.

The 30 inch cast iron pipe culvert, 257 feet long, in Nelsonville Yard, was replaced by a 4' x 4' concrete box culvert.

Wig-wag warning signals were installed at highway crossings at LeMoyné, Columbus and Carroll.

The new 100,000 gallon conical bottom steel water tank, replacing 20 x 26 wooden tank, at Bradner, which was reported as well under way in 1922, was completed and placed in service early in 1923.

	1923	1922	
Operating Revenues were..	\$17,563,402.40	\$13,855,463.95	Inc. \$3,707,938.45
Net Opr. Revenues were..	3,536,213.28	3,108,330.79	Inc. 427,882.49
Operating Ratio	79.9%	77.6%	Inc. 2.3%
Tons of Revenue Freight			
Carried One Mile.....	2,043,870,203	1,484,625,674	Inc. 559,244,529
Revenue Train Load—Tons	1,501	1,447	Inc. 54
Revenue Tons per Loaded			
Car	44.7	44.4	Inc. 0.3

The revenue coal and coke tonnage was 13,546,468 tons, an increase of 39.7%; other revenue freight tonnage was 3,884,980 tons, an increase of 30.5%. Total revenue tonnage was 17,431,448 tons, an increase of 37.6%. Freight revenue was \$15,156,748.09, an increase of 30.2%. Freight train mileage was 1,361,660 miles, an increase of 32.7%. Revenue ton miles were 2,043,870,203, an increase of 37.7%. Ton mile revenue was 7.42 mills, a decrease of 5.4%. Revenue per train mile was \$11.131, a decrease of 1.9%. Revenue tonnage per train mile was 1,501 tons, an increase of 3.7%; including Company's freight, the tonnage per train mile was 1,535 tons, an increase of 3.9%. Tonnage per locomotive, including Company's freight, was 1,288 tons, an increase of 1.0%. Revenue tonnage per loaded car was 44.7 tons, an increase of 0.7%. Tons of revenue freight carried one mile per mile of road were 5,863,586, an increase of 37.8%.

Transportation expenses were \$5,219,253.54, an increase of \$512,323.84, or 10.9%, whereas operating revenues increased 26.8% and revenue ton miles increased 37.7%. The ratio of Transportation Expenses to Revenues was 29.7% in 1923 and 34.0% in 1922. The increase in the total operating ratio from 77.6% in 1922 to 79.9% in 1923 was caused by increased expenditures for Maintenance of Equipment from \$4,157,350.58 in 1922 to \$6,476,071.61 in 1923, an increase of \$2,318,721.03, or 55.8%. Early in 1922 prospects for increased business required that proper steps be taken to put all of the motive power and freight cars in condition for service. This program was seriously retarded by the strike of the Shop Crafts on July 1, 1922. Contracts were made for repairing 1,200 coal cars and 10 locomotives at outside shops at cost of \$1,199,932, of which \$471,000 was charged to expenses in 1922 and \$728,932 in 1923. In addition your Company's car and locomotive shops were worked to full capacity practically throughout the year. There were 3,707 old, light capacity freight cars (including about 2,000 wooden 40-ton gondola cars) retired from service during the year,

involving a charge to operating expenses of \$1,010,679. As a result of the completion of these plans there were only 721 freight cars, or 5.8% of the number owned, out of service for heavy repairs on December 31, 1923, compared with 4,573 or 31.2% of ownership on January 1, 1923, and there were 13 locomotives, or 7.9% of the total undergoing or awaiting heavy repairs on December 31, 1923, as compared with 28 locomotives, 16.8% of the total on January 1, 1923.

There were 648,485 passengers carried, a decrease of 7.5%. The number of passengers carried one mile was 32,305,564, an increase of 3.9%. Passenger revenue was \$1,113,924.05, an increase of 3.5%. Revenue per passenger per mile was 3.448 cents, a decrease of 0.3%. The number of passengers carried one mile per mile of road was 92,680, an increase of 3.9%. Passenger train mileage was 634,977, an increase of 1.9%. Passenger revenue per train mile was \$1.754, an increase of 1.5%; including mail and express it was \$2.161, an increase of 4.8%. Passenger service train revenue per train mile was \$2.226, an increase of 4.4%. Reference was made in the last annual report to the decrease in local passenger business due to suspension of mining operations. While there was an increase of 29.6% in tonnage of coal shipped from local mines the number of local passengers carried decreased 13.5% and revenues therefrom decreased 8.8%. This loss in revenue was occasioned by the establishment of various motor bus lines as the highways became better. The loss of revenue, however, was offset by an increase of 43.8% in the number of through passengers and 52.9% in the revenue therefrom, resulting in a net increase of 3.9% in total revenues from passengers.

Coal mines located on your Company's lines shipped 3,123,817 tons of bituminous coal during the year, an increase of 29.6%. Tonnage of coal and coke received from connecting lines was 10,422,651 tons, an increase of 43.1%. Tonnage of freight other than coal and coke increased 30.5% over 1922, and 94.8% over the year 1921.

There were 1,073 tons of new 130-lb. rails, equal to 5.25 track miles, 3,703 tons of new 100-lb. rails, equal to 23.57 track miles, and 1 ton of new 90-lb. rails, equal to .01 track miles, used in renewals of existing main tracks.

There were 253,521 cross ties and 41,846 yards of ballast used in maintaining existing tracks, a decrease of 1,175 cross ties and an increase of 13,849 yards of ballast.

The average amount expended for repairs per locomotive was \$9,735.00, an increase of 5.0%; per passenger train car \$1,596.41, an increase of 6.2%; per freight train car \$245.14, an increase of 165.1%. These increases in unit costs were due to substantial improvement in condition of equipment and to the heavy retirements alluded to above.

On December 20, 1923, an agreement of final settlement with the Director General of Railroads was made, whereby all accounts and claims arising out of Federal Control of your Company's property, January 1, 1918 to February 29, 1920, were adjusted on the basis of a net indebtedness of your Company to the Director General of \$700,000, which amount the Director General has indicated his willingness to fund until 1930 under the provisions of the Transportation Act of 1920. Included in the settlement was the indebtedness of your Company in the aggregate sum of \$2,895,794, representing the cost to the Director General of additions and betterments, exclusive of new equipment, made to your Company's property during the period of Federal Control.

Negotiations with the Interstate Commerce Commission for a final settlement covering the so-called Guaranty Period, March 1 to September 1, 1920, are still in progress. It is hoped that settlement will be secured during the year 1924.

Appreciative acknowledgment is hereby made to officers and employees for their efficient service during the year.

By order of the Board of Directors:

W. J. HARAHAN,
President.

O. P. VAN SWERINGEN,
Chairman.

GENERAL BALANCE SHEET, DECEMBER 31, 1923.

ASSETS.		LIABILITIES.	
Property Investment.		Capital Stock	\$11,000,000.00
Cost of Road.....	\$34,849,775.12	Funded Debt.	
Cost of Equipment.....	20,465,673.01	First Consolidated Mortgage 4½% Bonds, 1999	\$16,022,000.00
	\$55,315,448.13	First Mortgage C. & H. V. R. R. 4% Bonds, 1948	1,401,000.00
Securities of Proprietary, Affiliated and Controlled Companies—Pledged.		First Mortgage C. & T. R. R. 4% Bonds, 1955	2,441,000.00
Stocks	\$108,088.66	Five Year 6% Secured Gold Notes.....1924	7,500,000.00
Bonds	300,000.00	Ten Year 6% Collateral Notes.....1931-1932	1,665,000.00
	408,088.66		<u>29,029,000.00</u>
Securities of Proprietary, Affiliated and Controlled Companies—Unpledged.		Equipment Trust Obligations.....	6,368,000.00
Stocks	\$201.00		<u>\$35,397,000.00</u>
Bonds	196,451.80		
	196,652.80	General Mortgage 6% Bonds, not in hands of public (see Contra).....1949	11,820,000.00
Other Investments—Pledged.			<u>\$46,397,000.00</u>
Bonds	175,000.00	Working Liabilities.	
Securities—Issued—Pledged.		Traffic Balances	\$471,880.74
General Mortgage 6% Bonds (see Contra) ..	11,820,000.00	Audited Vouchers and Wages Unpaid.....	1,022,523.33
	<u>\$67,915,189.59</u>	Miscellaneous Accounts Payable.....	170,125.92
Working Assets.		Matured Interest, Dividends and Rents Unpaid	377,882.50
Cash	\$1,683,461.87	Other Working Liabilities.....	1,801,224.34
Demand Loans and Deposits.....	200,000.00		<u>\$3,843,636.83</u>
Time Drafts and Deposits.....	1,620,000.00	Deferred Liabilities.	
Special Deposits	3,159,289.34	Unmatured Interest, Dividends and Rents Payable	\$315,488.33
Traffic Balances	547,463.59	Taxes Accrued	899,739.81
Agents and Conductors.....	45,236.85	Insurance and Casualty Reserves.....	71,803.97
Miscellaneous Accounts Receivable.....	370,731.88	Operating Reserves	155,261.14
Other Working Assets.....	34,837.46	Accrued Depreciation—Equipment	4,142,840.85
	<u>\$7,661,020.99</u>	United States Government.....	700,423.32
Material and Supplies.....	1,752,497.08	Other Deferred Credit Items.....	420,765.87
Securities in Treasury—Unpledged.			<u>6,706,323.29</u>
Stocks	\$500.00		
Bonds	326,000.00	Appropriated Surplus.	
Notes	880,000.00	Additions to Property through Income since June 30, 1907.....	\$279,360.71
(Includes \$180,000.00 Five-year 6% Secured Gold Notes)		Funded Debt Retired through Income and Surplus	131,331.90
	1,206,500.00	Other Reserves	116,510.99
Deferred Assets.		Appropriated surplus against contingent liability for freight claims.....	13,405.25
Advances to Proprietary, Affiliated and Controlled Companies	\$57,790.72		<u>\$540,608.85</u>
Advances, Working Funds.....	5,606.06	Profit and Loss—Balance.....	10,459,242.94
Insurance paid in advance.....	3,437.64		<u>\$79,766,811.91</u>
Cash in Sinking Funds.....	650.74		
Special Deposit with Trustee—Mortgage Fund	335,691.88		
Cash and Securities in Insurance Reserve Fund	71,463.26		
United States Government.....	421.89		
Other Deferred Debit Items.....	756,542.06		
	<u>1,231,604.25</u>		
	<u>\$11,851,622.32</u>		
Total	\$79,766,811.91	Total	\$79,766,811.91

[ADVERTISEMENT]

Central of Georgia Railway Company — Twenty-ninth Annual Report

Savannah, Ga., March 22, 1924.

To the Stockholders:

The Board of Directors herewith submits the following report for the year ended December 31, 1923.

MILES OF ROAD OPERATED

Miles of road operated at December 31, 1923.....	1,920.64
Miles of road operated at December 31, 1922.....	1,920.84
Decrease .....	.20

INCOME

A comparative condensed summary of the income account is stated below.

	1923 1,920.64	1922 1,919.06	+Increase —Decrease 1.58
Average miles of road operated.....			
Operating revenues.....	\$26,198,846.35	\$23,286,736.52	\$+2,912,109.83
Operating expenses.....	21,138,070.05	17,941,395.57	+3,196,674.48
Excess of revenues over expenses	5,060,776.30	5,345,340.95	— 284,564.65
Taxes	1,177,928.68	1,222,280.14	— 44,351.46
Uncollectible railway revenues..	35,910.53	21,745.06	+ 14,165.47
Total	1,213,839.21	1,244,025.20	— 30,185.99
Operating income.....	3,846,937.09	4,101,315.75	— 254,378.66
Equipment rents—Net credit...	208,068.54	408,628.99	— 200,560.45
Joint facility rents—Net debit..	110,634.60	117,860.32	— 7,225.72
Total	97,433.94	290,768.67	— 193,334.73
Net railway operating income..	3,944,371.03	4,392,084.42	— 447,713.39
Non-operating income	2,867,590.11	807,761.17	+2,059,828.94
Gross income.....	6,811,961.14	5,199,845.59	+1,612,115.55
Deductions from gross income..	3,155,607.00	3,134,033.47	+ 21,573.53
Net income.....	\$3,656,354.14	\$2,065,812.12	\$+1,590,542.02

NON-OPERATING INCOME

The increase of \$2,059,828.94 (255.60%) in "Non-Operating Income" is due mainly to extra dividend from Ocean Steamship Company of Savannah.

DEDUCTIONS FROM GROSS INCOME

The increase of \$21,573.53 (0.688%) in "Deductions from Gross Income" is due to increase of \$48,256.51 (2.05%) in interest on funded debt through issue of Equipment Trust "O," June 1, 1923; decrease of \$69,197.93 (36.98%) in interest on advances from affiliated companies; and increase of \$42,514.95 (7.19%) in miscellaneous deductions.

TRANSPORTATION OPERATIONS

The following statement shows increases and decreases in operating revenues and expenses, and other items affecting "Net Railway Operating Income:"

Railway Operating Revenues:	1923	1922	+Increase —Decrease
Freight	\$18,040,942.53	\$15,893,822.16	\$+2,147,120.37
Passenger	5,675,131.93	5,132,170.74	+ 542,961.19
Mail	479,715.02	483,402.66	— 3,687.64
Express	902,929.36	759,374.90	+ 143,554.46
Other passenger train.....	237,071.39	232,727.25	+ 4,344.14
Other transportation	332,864.65	307,851.82	+ 25,012.83
Incidental and joint facility..	530,191.47	477,386.99	+ 52,804.48
Total railway operating revenues	26,198,846.35	23,286,736.52	+2,912,109.83
Railway Operating Expenses:			
Maintenance of way and structures	3,414,981.86	2,983,857.03	+ 431,124.83
Maintenance of equipment...	5,605,847.43	4,389,661.48	+1,216,185.95
Traffic	835,118.23	777,175.73	+ 57,942.50
Transportation	10,197,285.34	8,824,395.56	+1,372,889.78
Miscellaneous operations	113,186.81	88,777.20	+ 24,409.61
General	996,165.03	895,264.15	+ 100,900.88
Transportation for investment—Credit	24,514.65	17,735.58	+ 6,779.07
Total railway operating expenses	21,138,070.05	17,941,395.57	+3,196,674.48
Net revenue from railway operations	5,060,776.30	5,345,340.95	— 284,564.65
Railway Tax Accruals.....	1,177,928.68	1,222,280.14	— 44,351.46
Uncollectible Railway Revenues	35,910.53	21,745.06	+ 14,165.47
Total	1,213,839.21	1,244,025.20	— 30,185.99
Railway operating income..	3,846,937.09	4,101,315.75	— 254,378.66
Equipment Rents—Net credit...	208,068.54	408,628.99	— 200,560.45
Joint Facility Rents—Net debit	110,634.60	117,860.32	— 7,225.72
Total	97,433.94	290,768.67	— 193,334.73
Net railway operating income	\$3,944,371.03	\$4,392,084.42	\$— 447,713.39

RAILWAY OPERATING REVENUES

"Railway Operating Revenues" increased \$2,912,109.83 (12.51%). The increase of \$2,147,120.37 (13.51%) in "Freight Revenue" was due to improvement in general business conditions. The tons of revenue freight carried one mile were 1,622,744,453, an increase of 358,322,291 ton miles (28.34%). The average revenue per ton was \$2.14 as compared with \$2.37 for the previous year, and the average revenue per ton mile was 1.11 cents as compared with 1.25 cents for the previous year.

The increase of \$542,961.19 (10.58%) in "Passenger Revenue" was due to improvement in passenger travel. Revenue passengers carried one mile were

180,028,985 an increase of 15,975,711 (9.74%). Average revenue per passenger per mile was 3.15 cents as compared with 3.13 cents for the previous year.

"Mail Revenue" decreased \$3,687.64 (0.76%).

"Express Revenue" increased \$143,554.46 (18.90%).

The increase in "Other Passenger Train," "Other Transportation," "Incidental" and "Joint Facility" revenues, aggregating \$82,161.45 (8.07%), was due to increased revenue from storage, demurrage and miscellaneous.

RAILWAY OPERATING EXPENSES

"Railway Operating Expenses" increased \$3,196,674.48 (17.82%).

The increase of \$431,124.83 (14.45%) in "Maintenance of Way and Structures" was due to a more extensive maintenance program and increase in wages during the year.

The increase of \$1,216,185.95 (27.71%) in "Maintenance of Equipment" was due to a more extensive maintenance program during the year.

Charges to "Maintenance of Equipment" for depreciation were \$645,281.23, an increase of \$29,274.96 (4.75%). The average miles per serviceable locomotive were 35,836, an increase of 3,567 miles (11.05%). The average age of locomotives was 18.3 years as compared with 19.4 years for previous year.

"Traffic" expenses increased \$57,942.50 (7.46%).

The increase of \$1,372,889.78 (15.56%) in "Transportation" expenses was due to increase in business.

"General" expenses increased \$100,900.88 (11.27%).

RAILWAY TAX ACCRUALS

"Railway Tax Accruals" were \$1,177,928.68 as compared with \$1,222,280.14 last year, a decrease of \$44,351.46 (3.63%).

UNCOLLECTIBLE RAILWAY REVENUES

"Uncollectible Railway Revenues" amounted to \$35,910.53 as compared with \$21,745.06 last year, an increase of \$14,165.47 (65.14%).

JOINT FACILITY RENTS—NET DEBIT

"Joint Facility Rents—Net debit" decreased \$7,225.72 (6.13%).

CAPITAL STOCK

During the year the entire issue (\$15,000,000) of cumulative six per cent Preferred Stock was surrendered and cancelled in exchange for the same amount of Common Stock simultaneously issued, as authorized by charter amendment from the Secretary of State of Georgia of December 1, 1923. The Capital stock is now all of one class, 200,000 shares of Common Stock of a total par value of \$20,000,000.

FUNDED DEBT

Central of Georgia Equipment Trust "O" for \$2,910,000 was issued June 1, 1923, for approximately 75% of the cost of 20 mikado type locomotives, 5 mountain type locomotives, 500 steel underframe ventilated box cars, 300 steel hopper coal cars, 200 composite steel frame gondola cars, 100 steel underframe stock cars, 2 all steel open passenger coaches, 2 all steel partition passenger coaches, 2 all steel express cars; all of which were received and put in service during the year with the exception of 10 mikado type locomotives which were received and put in service during February, 1924. The certificates mature in 15 equal annual installments, June 1, 1924, to 1938, with interest at 5% per annum, payable semi-annually.

\$100,000 certificates of Equipment Trust "L" and \$66,000 certificates of Equipment Trust "N" matured and were retired.

\$30,000 of Upper Cahaba Branch First Mortgage Bonds and \$30,000 of Greenville and Newnan Main Line First Mortgage Bonds matured and were retired.

\$1,000 of First and \$4,000 of Second Preference Income Bonds were purchased and cancelled.

OTHER INDEBTEDNESS

Non-negotiable debt to affiliated companies decreased \$2,520,316, reducing the amount to \$580,080. The company has no floating debt.

DIVIDENDS

During the year preferred dividends Nos. 22 and 23 (total \$900,000) at the stipulated rate of six per cent per annum, and common dividends Nos. 18 and 19 (total \$250,000) at the rate of five per cent per annum, were declared and paid.

PHYSICAL CHANGES

The following is a summary of important improvements during the year, the cost of which was wholly or in part charged to investment accounts:

ROADWAY AND STRUCTURES

93,381 miles of main track were relaid with new 90 pound steel rail; 8,344 miles were relaid with new 80 pound steel rail. Of the new rail 14,905 miles replaced rail of the same weight and 79,310 miles replaced rail of lighter weight. 26,986 miles of track were relaid with second hand steel rail, replacing rail of lighter weight. 15,909 miles of track were relaid with second hand steel rail, replacing rail of the same weight. Total mileage of track relaid with new and second hand steel rail was 137,109.

58 new industrial tracks aggregating 2,569 miles were added, while 27 industrial tracks aggregating 2,798 miles were removed; a net increase of 31 industrial tracks and a net decrease of 2,290 miles.

76 new company sidings aggregating 9,783 miles were added, while 35 company sidings aggregating 2,981 miles were removed; a net increase of 41 company tracks and a net increase of 6,802 miles.

109.78 miles of ballasted track were repaired or renewed to restore the track to its original standard. 46.18 miles of unballasted track were ballasted.

4,726 lineal feet of pile and timber trestles were replaced by permanent culverts and embankment, and 5,567 lineal feet of untreated pile and timber trestles were rebuilt in cross-tied material to conform to standard.

2,255 lineal feet of cast iron and reinforced concrete pipe and reinforced concrete boxes were installed to provide waterways for trestles filled, and 2,949 lineal feet of cast iron and reinforced concrete pipe and reinforced concrete boxes were installed to replace crushed terra cotta pipes and wooden box drains.

310,020 cross ties were renewed, being equivalent to 121.10 miles of continuous track or 4.53 per cent of all ties in track, including sidings.

75.2 miles of automatic block signals were installed and put into service between Ft. Valley and Albany, Ga., making a total of 228.3 miles of road protected by automatic block signals.

One 150 ton, 50 foot, 4 section, Fairbanks Track Scale was installed at Macon, Ga.

One 600 ton capacity reinforced concrete coaling and sanding station was built at Macon, Ga. In addition ground storage for 9,000 tons was provided together with the necessary reclaiming machinery.

8.9 miles of telephone lines were constructed, representing 93,984 feet of wire.

Two new water stations were erected during the year. A 150,000 gallon steel tank with mud drum at Spinks, Ala.; replacing two 50,000 gallon wood tanks. A 50,000 gallon creosoted high service tank on concrete foundations and two ten-inch penstocks equipped with fanner drop spouts at Davisboro, Ga., replacing two old steel tanks. Also a ten inch penstock was installed on ladder track at Cedartown, Ga., and the pumping facilities at Americus, Ga., were improved by the installation of a larger pump and automatic control.

The 75 foot turn-table retired at Columbus last year was installed at Savannah Shops, replacing a 65 foot turn-table.

A five panel 65 foot ballast deck trestle was built of creosoted material at Mile Post 163.3 Savannah District, providing an underpass for the crossing of Edgar Brothers clay mine railroad.

The overhead bridge of steel and wood, carrying Second Street at Macon, Ga., over the Atlanta District tracks was replaced with a reinforced concrete bridge and widened to conform to width of street.

At Mile Post 275.5, Columbus District, two new concrete abutments were built and plate order span erected to provide an underpass, eliminating grade crossing.

INCOME STATEMENT

	Year Ended December 31,		Per Cent of Total Operating Revenues		Per Cent of Total Operating Revenues		+Increase —Decrease	
	1923	Revenues	1922	Revenues	1923	Revenues	1922	Revenues
Average miles operated	1,920.64	....	1,919.06	....	+	1.58		
Railway Operating Revenues:								
I. Transportation—								
Rail Line:								
101. Freight	\$18,040,942.53	68.86	\$15,893,822.16	68.25	+	\$2,147,120.37		
102. Passenger	5,675,131.93	21.66	5,132,170.74	22.04	+	542,961.19		
103. Excess baggage	40,229.87	.15	37,963.13	.16	+	2,266.74		
104. Sleeping car	152,094.00	.58	149,841.62	.65	+	2,252.38		
105. Parlor and chair car	15,954.98	.06	17,107.99	.07	—	1,153.01		
106. Mail	479,715.02	1.83	483,402.66	2.08	—	3,687.64		
107. Express	902,929.36	3.45	759,374.90	3.26	+	143,554.46		
108. Other passenger train	8,795.74	.03	7,095.97	.03	+	1,699.77		
109. Milk	19,996.80	.08	20,718.54	.09	—	721.74		
110. Switching	317,249.15	1.21	286,956.57	1.23	+	30,292.58		
111. Special service train	15,615.50	.06	20,895.25	.09	—	5,279.75		
Total	25,668,654.88	97.97	22,809,349.53	97.95	+	2,859,305.35		
III. Incidental:								
131. Dining & buffet	91,477.17	.35	73,396.55	.32	+	18,080.62		
132. Hotel and restaurant	4,160.07	.02	4,137.90	.02	+	22.17		
133. Station train and boat privileges	29,733.29	.11	43,935.60	.19	—	14,202.31		
134. Parcel room	371.57	...	203.94	...	+	167.63		
135. Storage—Freight	77,123.55	.29	96,253.25	.41	—	19,129.70		
136. Storage—Baggage	1,297.53	...	1,400.95	...	—	103.42		
137. Demurrage	74,220.54	.28	49,480.42	.21	+	24,740.12		
141. Power	4,048.61	.02	4,147.14	.02	—	98.53		
142. Rents of buildings and other property	3,895.68	.02	3,390.32	.01	+	505.36		
143. Miscellaneous	200,456.68	.77	157,090.08	.68	+	43,366.60		
Total	486,784.69	1.86	433,436.15	1.86	+	53,348.54		
IV. Joint Facility:								
151. Joint facility—Cr.	43,853.26	.17	43,994.86	.19	—	141.60		
152. Joint facility—Dr.	446.48	....	44.02	....	+	402.46		
Total	43,406.78	.17	43,950.84	.19	—	544.06		
Total railway operating revenues	26,198,846.35	....	23,286,736.52	....	+	2,912,109.83		
Railway Operating Expenses:								
201-280. Maintenance of way and structures	3,414,981.86	13.03	2,983,857.03	12.81	+	431,124.83		
301-337. Maintenance of equipment	5,605,847.43	21.40	4,389,661.48	18.85	+	1,216,185.95		
351-359. Traffic	335,118.23	3.19	777,175.73	3.34	+	57,942.50		
371-420. Transportation—Rail line	10,197,285.34	38.92	8,824,395.56	37.90	+	1,372,889.78		
441-446. Miscellaneous operations	113,186.81	.43	88,777.20	.38	+	24,409.61		
451-462. General	996,165.03	3.80	895,264.15	3.85	+	100,900.88		
471. Transportation for investment—Cr.	24,514.65	.09	17,735.58	.08	+	6,779.07		
Total railway operating expenses	21,138,070.05	80.68	17,941,395.57	77.05	+	3,196,674.48		
Net revenue from railway operations	5,060,776.30	19.32	5,345,340.95	22.95	—	284,564.65		
532. Railway Tax Accruals	1,177,928.68	4.50	1,222,280.14	5.25	—	44,351.46		
533. Uncollectible Railway Revenues	35,910.53	.14	21,745.06	.09	+	14,165.47		
Railway operating income	\$3,846,937.09	14.68	\$4,101,315.75	17.61	—	\$254,378.66		

[ADVERTISEMENT]

	1923	1922	+Increase —Decrease	
Railway operating income— brought forward	\$3,846,937.09	\$4,101,315.75	— \$254,378.66	
Additions to Railway Operating Income:				
503. Hire of freight cars—Credit balance	197,809.63	393,319.89	— 195,510.26	
504. Rent from locomotives.....	27,767.53	20,387.42	+	7,380.11
505. Rent from passenger-train cars.....	124,122.32	118,198.84	+	5,923.48
507. Rent from work equipment...	10,283.76	10,358.90	—	75.04
508. Joint facility rent income...	63,298.13	44,409.37	+	18,888.76
Total additions to railway operating income.....	423,281.37	586,674.32	—	163,392.95
Deductions from Railway Operat- ing Income:				
537. Rent for locomotives.....	25,318.50	25,191.51	+	126.99
538. Rent for passenger-train cars	123,699.72	106,616.89	+	17,082.83
540. Rent for work equipment...	2,896.48	1,827.56	+	1,068.92
541. Joint facility rents.....	173,932.73	162,269.69	+	11,663.04
Total deductions from railway operating income	325,847.43	295,905.65	+	29,941.78
Net railway operating income.	3,944,371.03	4,392,084.42	—	447,713.39
Non-Operating Income:				
502. Revenues from miscellaneous operations	31,375.94	24,173.42	+	7,202.52
509. Income from lease of road ..	45,299.64	13,287.81	+	32,011.83
510. Miscellaneous rent income...	106,154.14	108,676.59	—	2,522.45
511. Miscellaneous non-operating physical property	49,069.87	43,996.35	+	5,073.52
513. Dividend income	2,430,789.00	431,872.09	+	1,998,916.91
514. Income from funded securi- ties	180,630.29	128,739.73	+	51,890.56
515. Income from unfunded secu- rities and accounts.....	24,262.03	57,001.18	—	32,739.15
519. Miscellaneous income	9.20	14.00	—	4.80
Total non-operating income...	2,867,590.11	807,761.17	+	2,059,828.94
Gross income	6,811,961.14	5,199,845.59	+	1,612,115.55
Deductions from Gross Income:				
534. Expenses of miscellaneous operations	40,497.51	31,036.47	+	9,461.04
542. Rent for leased roads.....	372,710.47	370,766.42	+	1,944.05
543. Miscellaneous rents	154,253.57	136,226.78	+	18,026.79
546-A. Interest on funded debt...	2,403,649.81	2,355,393.30	+	48,256.51
546-B. Interest on non-negotiable debt to affiliated companies....	117,948.18	187,146.11	—	69,197.93
547. Interest on unfunded debt...	1,613.99	*674.19	+	2,288.18
548. Amortization of discount on funded debt	47,177.85	37,673.50	+	9,504.35
551. Miscellaneous income charges	17,755.62	16,465.08	+	1,290.54
Total deductions from gross income	3,155,607.00	3,134,033.47	+	21,573.53
Net income	\$3,656,354.14	\$2,065,812.12	+	\$1,590,542.02

*Denotes credit or deficit as may be appropriate.

EQUIPMENT

Eight mikado locomotives were acquired. These locomotives were rebuilt by the American Locomotive Company from the eight consolidation type locomotives retired during 1922. Ten new mountain type locomotives, and ten new mikado locomotives were purchased. One eight wheel passenger locomotive was purchased, and one consolidation type locomotive was sold to Wrightsville and Tennille Railroad Company. Boiler pressure was reduced on 42 locomotives of old type in order to meet requirements of the Interstate Commerce Commission. The above changes give an increase of twenty-eight locomotives with a net increase of 1,335,424 pounds in tractive power.

Two all steel open coaches, two all steel partition coaches, and two all steel express cars were purchased. Three wooden and one steel coach; two wooden baggage and passenger cars; one wooden baggage, mail and passenger car; two wooden and one steel baggage and mail cars; two wooden and one steel baggage and express cars; and two wooden and one steel sleepers were destroyed in the Savannah Coach Shop fire.

Five hundred new and steel underframe steel end ventilated box cars; three hundred all steel hopper coal cars; two hundred steel underframe steel superstructure gondola coal cars; one hundred steel underframe steel superstructure stock cars; and one hundred steel underframe flat cars were purchased. Forty-seven all steel coal cars in 19,000 to 20,499 series were rebuilt by Virginia Bridge and Iron Company, and numbers changed to 20,501 series.

Twenty steel underframe cabooses, numbered 31,501 to 31,520 inclusive, and one roadway car, numbered 30,991, were built at Macon Shops.

One all steel, one hundred fifty ton, steam, self-propelling wrecking crane was purchased.

\$42,981.73 were expended in the application of superheaters, valve gears, piston valves and other improvements to locomotives.

\$14,715.96 were expended in re-inforcement of draft gear and other additions and betterments to freight cars.

\$8,349.46 were expended in the installation of electric generators and lights, air lift water system and additional toilets in passenger cars.

GENERAL

With deep sorrow the Directors announce the death on January 8, 1924, of William A. Winburn, Director and President, who had served since 1892 successively as General Freight Agent, Traffic Manager, Vice President, and since 1914 as President; and the death on January 26, 1924, of John E. Murphy, in the eleventh year of his service as Director. The Board has recorded its appreciation of their high character and valued service. A copy of the minute relating to Mr. Winburn is appended.

The Board of Directors takes this opportunity to express its appreciation for the integrity, efficiency and united efforts displayed by your officers and employees in the discharge of their duties.

By Order of the Board of Directors. CHARLES H. MARKHAM,
Chairman of the Board.

Missouri-Kansas-Texas Railroad Company and Controlled Companies—

REPORT AS OF DECEMBER 31, 1923

St. Louis, Mo., April 21, 1924.

TO THE STOCKHOLDERS:

The Board of Directors submit herewith report for the year ended December 31, 1923, including three months' operations of the Receiver prior to April 1st.

A summary of results of operation for the year compared with the year 1922 is as follows:

Operating Revenues were.....	\$55,987,918.08
(Increase, \$952,216.19 or 2%)	
Operating Expenses were.....	\$43,628,318.95
(Increase, \$3,944,617.91 or 10%)	
Net Operating Revenue was.....	\$12,359,599.13
(Decrease, \$2,992,401.72 or 19%)	
Taxes were	\$2,587,461.12
(Decrease, \$338,915.56 or 12%)	
Operating Income, Taxes Deducted, was.....	\$9,772,138.01
(Decrease, \$2,653,486.16 or 21%)	
Miscellaneous Income was.....	\$1,327,564.87
(Increase, \$816,178.66 or 160%)	
	\$11,099,702.88
Rentals and Other Payments were.....	\$918,034.33
(Decrease, \$1,190,787.39 or 56%)	
Income for the Year Available for Interest was.....	\$10,181,668.55
(Decrease, \$646,520.11 or 6%)	
Fixed Interest Charge for year was.....	\$4,781,973.66
(Decrease, \$119,872.10 or 2%)	
Balance available for Interest on Adjustment Bonds was....	\$5,399,694.89
Interest on Adjustment Bonds was.....	\$2,791,013.64
	\$2,608,681.25
Balance	

Interest charges are based on securities of company as reorganized.

FINANCIAL

Missouri-Kansas-Texas Railroad Company was incorporated under the general laws of the State of Missouri, July 6, 1922, and has acquired substantially all of the lines of railroad, franchises and property formerly of Missouri, Kansas & Texas Railway Company and The Wichita Falls & Northwestern Railway Company. The entire capital stock and all the mortgage bonds of the Missouri-Kansas-Texas Railroad Company of Texas (Reorganized Company) were also acquired, as well as all or a majority of the capital stock of various controlled and subsidiary companies now constituting part of the system as reorganized.

Missouri-Kansas-Texas Railroad Company acquired possession of the properties on April 1, 1923, in exchange for bonds and stock of the company. Of these securities there have thus far been issued and are now in the hands of the public the following:

	Outstanding in hands of public December 31, 1923.
Common Stock (no par value).....	804,874 shares
Preferred Stock (7% cumulative after January 1, 1928)....	\$23,939,200.00
Prior Lien Mortgage 5% Series "A" bonds.....	36,599,502.00
Prior Lien Mortgage 4% Series "B" bonds.....	11,483,750.00
Prior Lien Mortgage 6% Series "C" bonds.....	12,894,570.00
Adjustment Mortgage 5% Series "A" bonds.....	55,820,272.71

Total \$140,737,294.71

There are additional amounts of these securities in the hands of the Reorganization Managers, to be used for the purposes of the reorganization, and so far as not used, to be returned to the Company.

There were in addition on December 31, 1923, \$35,010,700.00 underlying bonds and equipment obligations left undisturbed in the reorganization, also \$4,750,000.00 United States Government Loans issued in June, 1923.

ROLLING STOCK

During the nine months to December 31, 1923, expenditures were made for new equipment amounting to \$7,614,901.42 and improvements to existing equipment amounting to \$227,873.20.

The value of equipment replacements during the nine months, less retirements, was \$716,098.29, leaving a net increase of \$8,558,872.91 in the value of equipment owned.

OPERATIONS

The mileage operated on December 31, 1923, was 3,202.55 compared with 3,738.51 on December 31, 1922, a decrease of 535.96 miles, due to 466.29 miles having been relinquished in the reorganization effective April 1, 1923, and 69.97 miles between Hannibal and Moberly, Mo., leased to the Wabash Railway Company effective August 1, 1923. Despite this decrease in mileage freight revenues increased \$592,813.79 or 1.5%, passenger revenue increased \$337,044.56 or 3.1%, other revenues increased \$22,357.84 or .5%, and total operating revenues increased \$952,216.19 or 2%.

Passenger and freight train service was generally satisfactory, and traffic was moved without interruption, with the exception of interference with operations during the month of October due to serious floods in Oklahoma. During that month the main line at crossings of the North and South Canadian Rivers between Muskogee and McAlester was broken for several days and there were numerous washouts on the Wichita Falls-Forgan branch where the line was out of service for practically the entire month.

The locomotive and car shops are on a normal operating basis and have adequate capacity to properly take care of all repair work.

Locomotives, passenger and freight cars, as well as track, and bridge and building structures, are in good condition.

It is expected that passenger and freight traffic will continue in volume at least equal to that of 1923, and the railroad is in condition to handle it economically.

ADDITIONS TO THE PROPERTY

The larger improvements completed during the year to attract traffic and facilitate operation were:

- Million bushel elevator at Kansas City.
- New freight and engine terminal at Denison.
- Locomotive shop at Bellmead.
- New freight stations at Waco and Wichita Falls and extension of present station at Ft. Worth.
- Water treating plants at 77 locomotive water stations.

New Equipment purchased and delivered during the year included the following:

- 40 Mikado Locomotives.
- 10 Switch Locomotives.
- 5 Pacific type passenger Locomotives.
- 30 Passenger coaches.

- 200 Refrigerator cars.
- 300 Flat cars.
- 500 Automobile cars.
- 1500 Box cars.

GENERAL

Negotiations with the Interstate Commerce Commission covering allowance for maintenance of the property and final determination of the amount guaranteed to the Receiver for operating income during the six months period beginning March 1, 1920, and ending August 31, 1920, under provisions of Section 209 of the Transportation Act, 1920, are still under way and it is hoped that final settlement may be reached at an early date.

Federal valuation of the properties by the Interstate Commerce Commission, with the cooperation and assistance to the Officers of the Company, has progressed during the year.

The officers and employees are especially commended for their faithful and efficient services during the past year.

C. E. SCHAFF, President.

MISSOURI-KANSAS-TEXAS LINES

INCOME ACCOUNT

(Year Ended December 31, 1923, Compared with Year Ended December 31, 1922)

	1923	1922	Increase or Decrease
Average Mileage Operated.....	3,359.76	3,737.46	—377.70
OPERATING REVENUE:			
Freight	\$39,791,214.67	\$39,198,400.88	\$592,813.79
Passenger	11,295,456.27	10,958,411.71	337,044.56
Mail	1,221,101.46	1,241,950.01	—20,848.55
Express	2,181,233.24	2,130,755.79	50,477.45
Miscellaneous	637,146.76	620,380.79	16,765.97
Incidental	788,633.92	710,075.52	78,558.40
Joint Facility.....	73,131.76	175,727.19	—102,595.43

Total Operating Revenue.....\$55,987,918.08 \$55,035,701.89 \$952,216.19

OPERATING EXPENSES:

Maintenance of Way and Structures	\$7,393,307.28	\$7,237,276.60	\$156,030.68
Maintenance of Equipment....	14,636,724.26	10,548,094.49	4,088,629.77
Traffic Expenses.....	1,151,353.02	1,041,435.68	109,917.34
Transportation Expenses	18,380,268.53	18,780,007.03	—399,738.50
Miscellaneous Operations.....	362,232.53	337,509.18	24,723.35
General Expenses.....	2,053,373.25	2,023,709.14	29,664.11
Transportation for Investment—Cr.	348,939.92	284,331.08	—64,608.84

Total Operating Expenses.....\$43,628,318.95 \$39,683,701.04 \$3,944,617.91

Net Operating Revenue.....\$12,359,599.13 \$15,352,000.85 —\$2,992,401.72

Railway Tax Accruals.....\$2,587,461.12 \$2,926,376.68 —\$338,915.56

Uncollectible Railway Revenue.. 26,091.57 31,354.78 —5,263.21

Total\$2,613,552.69 \$2,957,731.46 —\$344,178.77

Total Operating Income...\$9,746,046.44 \$12,394,269.39 —\$2,648,222.95

NON-OPERATING INCOME:

Rent from Locomotives.....	\$120,946.32	\$43,966.60	\$76,979.72
Rent from Passenger Train Cars	169,516.25	117,994.74	51,521.51
Rent from Work Equipment....	38,188.69	32,327.60	5,861.09
Joint Facility Rent Income....	177,901.72	185,871.10	—7,969.38
Income from Lease of Road..	61,273.12	11,273.12	50,000.00
Miscellaneous Rent Income....	58,211.70	96,751.51	—38,539.81
Miscellaneous Non-Operating Physical Property.....	18,051.75	26,096.20	—8,044.45
Dividend Income.....	8,000.00	5,500.00	2,500.00
Income from Funded Securities and Accounts.....	322,293.09	204,628.60	117,664.49
Income from Sinking and Other Reserve Funds.....	275,823.69	271,317.80	4,505.89
Miscellaneous Income.....	703,396.34	3,789.76	699,606.58

Total Non-Operating Income \$1,953,602.67 \$999,570.88 \$954,031.79

Gross Income.....\$11,699,649.11 \$13,393,840.27 —\$1,694,191.16

DEDUCTIONS FROM GROSS INCOME:

Hire of Freight Cars—Dr. Balance	\$519,500.86	\$1,403,503.84	—\$884,002.98
Rent for Locomotives.....	24,493.77	18,952.55	5,541.22
Rent for Passenger Train Cars	90,133.88	112,343.66	—22,209.78
Rent for Work Equipment....	8,636.22	9,818.30	—1,182.08
Joint Facility Rents.....	800,245.39	834,791.01	—34,545.62
Rent for Leased Roads.....	9,701.40	15,823.23	—6,121.83
Miscellaneous Rents.....	1,332.87	1,090.95	241.92
Miscellaneous Tax Accruals....	4,599.35	2,207.65	2,391.70
Interest on Unfunded Debt...	57,593.74	158,399.38	—100,805.64
Miscellaneous Income Charges.	1,743.08	8,721.04	—6,977.96

Total Deductions from Gross Income.....\$1,517,980.56 \$2,565,651.61 —\$1,047,671.05

Balance Available for Interest \$10,181,668.55 | \$10,828,188.66 | —\$646,520.11 |

Fixed Interest Charges..... 4,781,973.66 4,901,845.76 —119,872.10

Balance available for Interest on Adjustment Bonds \$5,399,694.89 \$5,926,342.90 —\$526,648.01

Interest on Adjustment Bonds. 2,791,013.64 2,791,013.64

Balance\$2,608,681.25 \$3,135,329.26 —\$526,648.01

Interest deductions are based on securities of reorganized company.

CONSOLIDATED GENERAL BALANCE SHEET

	December 31, 1923	April 1, 1923	Increase or Decrease		December 31, 1923	April 1, 1923	Increase or Decrease
ASSETS				LIABILITIES			
INVESTMENTS:				STOCK:			
Investment in Road and Equipment:				Capital Stock:			
Road	\$222,383,018.18	\$218,410,248.07	\$3,972,770.11	Preferred	\$30,000,000.00	\$30,015,000.00	—\$15,000.00
Equipment	48,009,239.08	39,450,366.17	8,558,872.91	Common	82,420,000.00	82,422,425.00	—2,425.00
	\$270,392,257.26	\$257,860,614.24	\$12,531,643.02	Total Stock	\$112,420,000.00	\$112,437,425.00	—\$17,425.00
Improvements on Leased Railway Property	7,959.96	7,959.96	.....	LONG TERM DEBT:			
Sinking Funds	43.75	338.56	—294.81	Mortgage Bonds:			
Deposits in Lieu of Mortgaged Property Sold	837.64	117,275.65	—116,438.01	Book Liability	\$107,832,899.00		
Miscellaneous Physical Property	552,027.89	141,673.44	410,354.45	Pledged with U. S. Government	6,100,000.00		
Investments in Affiliated Companies—Pledged	529,001.00	529,001.00	.....	Actually Outstanding	\$101,732,899.00	\$107,403,602.05	—\$5,670,703.05
Other Investments, (United States Government Securities)	3,195,156.25	4,457,874.98	—1,262,718.73	Equipment Trust Obligations	1,077,200.00	1,476,496.95	—399,296.95
Total Investments	\$274,677,283.75	\$263,114,737.83	\$11,562,545.92	United States Government Loans	5,140,000.00	420,000.00	4,720,000.00
CURRENT ASSETS:				Income Mortgage Bonds	57,500,000.00	57,500,000.00	.....
Cash	\$2,505,811.77	\$10,095,141.17	—\$7,589,329.40	Total Long Term Debt	\$165,450,099.00	\$166,800,099.00	—\$1,350,000.00
Time Drafts and Deposits	200,000.00	2,650,000.00	—2,450,000.00	CURRENT LIABILITIES:			
Special Deposits	11,293.76	80,353.38	—69,059.62	Traffic and Car Service Balances Payable	\$1,296,603.69	\$973,042.48	\$323,561.21
Loans and Bills Receivable	23,730.27	380.95	23,349.32	Audited Accounts and Wages Payable	4,904,357.61	5,245,705.16	—341,347.55
Traffic and Car Service Balances Receivable	775,082.20	578,413.86	196,668.34	Miscellaneous Accounts Payable	167,367.35	144,339.86	23,027.49
Net Balance Receivable from Agents and Conductors	1,126,575.43	816,707.02	309,868.41	Interest Matured Unpaid	2,082,841.51	7,562,829.91	—5,479,988.40
Miscellaneous Accounts Receivable	2,343,131.36	2,461,472.24	—118,340.88	Funded Debt Matured Unpaid	13,000.00	.....	13,000.00
Material and Supplies	8,059,484.01	8,167,593.75	—108,109.74	Unmatured Interest Accrued	1,658,729.81	2,370,458.35	—711,728.54
Interest and Dividends Receivable	23,619.78	40,196.08	—16,576.30	Unmatured Rents Accrued	107,109.67	103,021.85	4,087.82
Rents Receivable	132.00	33.00	99.00	Other Current Liabilities	243,513.89	2,397,299.15	—2,153,785.26
Other Current Assets	116,476.29	70,503.83	45,972.46	Total Current Liabilities	\$10,473,523.53	\$18,796,696.76	—\$8,323,173.23
Total Current Assets	\$15,185,336.87	\$24,960,795.28	—\$9,775,458.41	DEFERRED LIABILITIES:			
DEFERRED ASSETS:				Other Deferred Liabilities	\$78,171.52	\$233,516.58	—\$155,345.06
Working Fund Advances	\$77,546.50	\$75,320.32	\$2,226.18	UNADJUSTED CREDITS:			
Other Deferred Assets	9,000.00	68,742.40	—59,742.40	Tax Liability	\$1,128,310.66	\$1,773,286.57	—\$644,975.91
Total Deferred Assets	\$86,546.50	\$144,062.72	—\$57,516.22	Insurance and Casualty Reserves	162.30	74.55	87.75
UNADJUSTED DEBITS:				Accrued Depreciation—Equipment	1,161,373.72	42,592.72	1,118,781.00
Rents and Insurance Premiums Paid in Advance	\$93,907.79	\$141,105.04	—\$47,197.25	Other Unadjusted Credits	1,799,462.24	1,185,215.92	614,246.32
Other Unadjusted Debits	421,614.42	436,944.64	—15,330.22	Total Unadjusted Credits	\$4,089,308.92	\$3,001,169.76	\$1,088,139.16
Reorganization Suspense	4,349,517.75	12,471,261.59	—8,121,743.84	CORPORATE SURPLUS:			
Securities Issued or Assumed—Pledged (With U. S. Government)	\$6,100,000.00			Additions to Property through Income and Surplus	\$15,353.28	.....	\$15,353.28
Total Unadjusted Debits	\$4,965,039.96	\$13,049,311.27	—\$8,184,271.31	Profit and Loss—Balance	2,287,750.83	.....	2,287,750.83
Total	\$294,814,207.08	\$301,268,907.10	—\$6,454,700.02	Total Corporate Surplus	\$2,303,104.11	.....	\$2,303,104.11
Note—Intercompany Assets and Liabilities are excluded.				Total	\$294,814,207.08	\$301,268,907.10	—\$6,454,700.02
The Company is guarantor, jointly with other companies, of the securities of certain terminal companies, none of which are in default.							

OPERATING REVENUES AND EXPENSES FOR TEN YEARS ENDED DECEMBER 31, 1923

REVENUES									
	Average Mileage Operated	Freight	Passenger	Mail	Express	Miscellaneous	Other	Total	
1914	3,848.97	\$20,692,214.11	\$ 8,489,071.23	\$ 718,386.06	\$ 883,642.79	\$246,703.14	\$ 609,546.56	\$31,639,563.89	
1915	3,865.07	22,142,576.03	9,966,913.35	770,382.12	858,629.05	267,702.92	447,258.98	32,453,462.45	
1916	3,865.02	24,795,719.61	9,215,627.16	783,675.57	1,055,446.23	331,073.57	552,140.14	36,733,682.28	
1917	3,866.31	29,027,903.37	11,160,922.06	796,848.22	1,239,934.08	426,765.48	691,777.18	43,344,150.39	
1918	3,860.88	35,754,940.45	14,715,178.42	765,503.13	1,623,472.00	489,494.21	790,210.76	54,138,798.97	
1919	3,838.66	41,283,105.84	16,709,710.51	715,238.82	1,609,690.09	416,308.03	1,091,323.00	61,825,376.29	
1920	3,793.42	47,363,850.89	19,378,120.16	2,286,746.58	1,899,966.98	794,557.53	1,191,494.82	72,914,737.06	
1921	3,783.69	43,782,692.09	13,904,679.97	1,356,041.38	2,102,426.33	779,656.03	1,095,479.65	63,020,975.45	
1922	3,737.46	39,198,400.88	10,958,411.71	1,241,950.01	2,130,755.79	620,380.79	885,802.71	55,035,701.89	
1923	3,359.76	39,791,214.67	11,295,456.27	1,221,101.46	2,181,233.24	637,146.76	861,765.68	55,987,918.08	
EXPENSES									
	Maintenance of Way and Structures	Maintenance of Equipment	Traffic	Transportation Expenses	General and Other	Total	Net Revenue		
1914	\$4,098,710.24	\$4,191,637.16	\$700,920.30	\$12,065,737.51	\$1,301,358.03	\$22,358,363.24	\$9,281,200.65		
1915	5,277,655.26	4,657,976.77	658,522.72	11,494,484.95	1,135,176.59	23,223,816.29	9,229,646.16		
1916	7,635,694.93	7,273,803.80	725,564.62	12,400,520.85	1,404,117.14	29,439,700.74	7,293,981.54		
1917	6,353,665.13	8,737,922.08	796,979.55	15,672,561.22	1,594,982.61	33,146,110.59	10,198,039.80		
1918	9,539,254.15	12,630,284.39	582,149.43	22,377,510.36	2,199,835.07	47,329,033.40	6,809,765.57		
1919	12,124,064.16	14,814,834.52	657,119.63	26,876,430.00	2,514,447.24	56,986,895.55	4,838,480.74		
1920	16,422,652.00	17,378,345.36	978,596.39	32,014,151.75	3,087,133.40	69,880,878.90	3,033,858.16		
1921	9,835,638.33	13,803,427.26	1,064,545.36	22,866,804.76	2,485,368.60	50,055,784.31	12,965,191.14		
1922	7,237,276.60	10,548,094.49	1,041,435.68	18,780,007.03	2,076,887.24	39,683,701.04	15,352,000.85		
1923	7,393,307.28	14,636,724.26	1,151,353.02	18,380,268.53	2,066,665.86	43,628,318.95	12,359,599.13		
RATIO TO TOTAL REVENUE									
	Maintenance of Way and Structures	Maintenance of Equipment	Traffic	Transportation Expenses	General and Other	Total	Net Revenue		
1914	12.95	13.25	2.22	38.13	4.12	70.67	29.33		
1915	16.26	14.35	2.03	35.42	3.50	71.56	28.44		
1916	20.79	19.80	1.98	33.75	3.82	80.14	19.86		
1917	14.66	20.16	1.81	36.16	3.68	76.47	23.53		
1918	17.62	23.33	1.07	41.34	4.06	87.42	12.58		
1919	19.61	23.96	1.06	43.47	4.07	92.17	7.83		
1920	22.52	23.84	1.34	43.91	4.23	95.84	4.16		
1921	15.61	21.90	1.69	36.28	3.95	79.43	20.57		
1922	13.15	19.17	1.89	34.13	3.77	72.11	27.89		
1923	13.20	26.14	2.06	32.83	3.70	77.93	22.07		

[ADVERTISEMENT]

New York, Chicago and St. Louis Railroad Company—First Annual Report

To the Stockholders of

THE NEW YORK, CHICAGO AND ST. LOUIS RAILROAD COMPANY:

The Board of Directors herewith submits its report for the year ended December 31, 1923.

This Company was formed under the laws of New York, Pennsylvania, Ohio, Indiana, and Illinois by consolidation of

The New York, Chicago and St. Louis Railroad Company,

The Chicago and State Line Railroad Company,

Toledo, St. Louis and Western Railroad Company,

The Lake Erie and Western Railroad Company; and

Fort Wayne, Cincinnati and Louisville Railroad Company.

The Agreement and Articles of Consolidation were entered into by the directors of the constituent companies on December 28, 1922. Ratification by the stockholders, and compliance with the requirements of State statutes, were completed on April 11, 1923, on which date the consolidation became effective.

The total capital stock of the consolidated company authorized by the

INCOME ACCOUNT

	1923	1922
OPERATING INCOME		
Railway operating revenues.....	\$57,477,378.99	\$50,948,424.92
Railway operating expenses.....	43,938,161.63	39,060,666.86
NET REVENUE FROM RAILWAY OPERATIONS.....	\$13,539,217.36	\$11,887,758.06
Railway tax accruals.....	\$2,852,483.16	\$2,604,453.98
Uncollectible railway revenues.....	7,690.40	5,890.87
	\$2,860,173.56	\$2,610,344.85
RAILWAY OPERATING INCOME.....	\$10,679,043.80	\$9,277,413.21
NONOPERATING INCOME		
Rent from locomotives.....	\$47,094.88	\$63,553.08
Rent from passenger-train cars.....	23,524.58	19,849.59
Rent from work equipment.....	13,921.10	12,290.98
Joint facility rent income.....	202,748.19	263,790.33
Miscellaneous rent income.....	119,893.26	77,860.17
Miscellaneous nonoperating physical property.....	24,821.28	22,748.29
Dividend income.....	719,582.50	85,768.50
Income from funded securities.....	46,968.06	56,526.22
Income from unfunded securities and accounts.....	329,194.80	316,866.52
Income from sinking and other reserve funds.....	425.00	425.00
Miscellaneous income.....	2,625.30	4,562.62
TOTAL NONOPERATING INCOME.....	\$1,530,798.95	\$924,241.30
GROSS INCOME.....	\$12,209,842.75	\$10,201,654.51

GENERAL BALANCE SHEET, DECEMBER 31, 1923

ASSETS		LIABILITIES	
INVESTMENTS		Stock	
Investment in road and equipment		Capital stock	
Road.....	\$142,029,270.45	Common.....	\$45,942,800.00
Equipment.....	39,575,064.93	Cumulative preferred, Series A.....	32,508,300.00
General expenditures.....	435,712.96	Ownership certificates	
		Common.....	7,050.00
Improvements on leased railway property..	56,777.82	Cumulative preferred, Series A.....	10,650.00
Sinking fund for equipment trust certificates	211,911.41		\$78,468,800.00
Deposits in lieu of mortgaged property sold.	116,800.99	Stock liability for conversion	
Miscellaneous physical property.....	1,025,057.71	Common.....	\$298,050.00
Investments in affiliated companies		Cumulative preferred, Series A.....	201,050.00
Stocks.....	\$7,839,183.00		499,100.00
Bonds.....	466,601.00		\$78,967,900.00
Advances.....	93,800.00		
	8,399,584.00	LONG TERM DEBT	
Other investments		Funded debt unmatured	
Stocks.....	\$1,000.00	Equipment obligations.....	\$13,232,000.00
Bonds.....	189,166.32	Mortgage bonds.....	66,835,000.00
Notes.....	21,300.00	Mortgage bonds nominally issued.....	2,504,000.00
Miscellaneous.....	2,090.00	Collateral trust notes	
	214,056.32	Note to U. S. R. R. Administration.....	1,000,000.00
CURRENT ASSETS		U. S. Govt. loan notes, Series 1921.....	600,000.00
Cash.....	\$3,469,481.43	Miscellaneous obligations	
Time drafts and deposits.....	1,833,397.00	Serial notes to New York Central R. R.....	1,170,000.00
Special deposits.....	3,062,993.26		\$85,341,000.00
Loans and bills receivable.....	141,194.27	Receiver's certificates of indebtedness.....	692,000.00
Traffic and car service balances receivable.	1,286,418.61		86,033,000.00
Net balance receivable from agents and conductors.....	708,231.88	CURRENT LIABILITIES	
Miscellaneous accounts receivable.....	1,350,266.70	Loans and bills payable.....	\$4,273,381.11
Material and supplies.....	4,963,551.07	Traffic and car service balances payable..	1,861,425.55
Interest and dividends receivable.....	265,940.68	Audited accounts and wages payable.....	6,452,751.04
Rents receivable.....	14,600.61	Miscellaneous accounts payable.....	998,323.68
Other current assets.....	438,649.84	Interest matured unpaid.....	502,345.00
	17,534,725.35	Dividends matured unpaid.....	836,569.50
DEFERRED ASSETS		Unmatured interest accrued.....	808,874.44
Working fund advances.....	\$16,851.55	Other current liabilities.....	699,985.29
Insurance and other funds.....	10,287.50		16,433,655.61
Other deferred assets.....	9,748,469.86	DEFERRED LIABILITIES	
	9,775,608.91	Other deferred liabilities.....	10,488,248.31
UNADJUSTED DEBITS		UNADJUSTED CREDITS	
Rents and insurance premiums paid in advance.....	\$62,500.00	Tax liability.....	\$2,441,778.87
Discount on funded debt.....	338,620.14	Operating reserves.....	177,807.14
Other unadjusted debits.....	2,472,204.51	Accrued depreciation—Equipment.....	7,570,246.58
Securities issued or assumed		Other unadjusted credits.....	2,709,607.59
—Unpledged			12,899,440.18
Capital stock—Common....	\$15,751,596.00	CORPORATE SURPLUS	
Cumulative preferred	6,785,714.00	Additions to property through income and surplus.....	\$5,703,172.35
Second and improvement mortgage bonds.....	690,000.00	Funded debt retired through income and surplus.....	1,478,296.96
Prior lien bonds.....	425,000.00	Miscellaneous fund reserves.....	93,800.00
	23,652,310.00		
Securities issued or assumed		Total appropriated surplus.....	\$7,275,269.31
—Pledged		Profit and loss—Balance.....	35,883,692.09
Second and improvement mortgage bonds.....	\$1,389,000.00		43,158,961.40
Receiver's certificates of indebtedness.....	692,000.00		
	2,081,000.00		
	28,606,634.65		
	\$247,981,205.50		\$247,981,205.50

[ADVERTISEMENT]

DEDUCTIONS FROM GROSS INCOME

Hire of freight cars—Debit balance.....	\$1,301,615.28	\$794,370.42
Rent for locomotives.....	13,723.25	58,610.01
Rent for passenger-train cars.....	59,899.51	54,342.97
Rent for work equipment.....	14,472.88	4,326.38
Joint facility rents.....	377,767.57	351,402.61
Rent for leased roads.....	2,789.90	5,689.90
Miscellaneous rents.....	101,100.76	174,921.51
Miscellaneous tax accruals.....	9,316.17	14,317.38
Interest on funded debt.....	3,669,233.39	3,121,179.87
Interest on unfunded debt.....	248,575.30	117,211.49
Amortization of discount on funded debt....	45,846.79	46,353.63
Miscellaneous income charges.....	34,160.34	118,965.22

TOTAL DEDUCTIONS FROM GROSS INCOME..... \$5,878,501.14 \$4,861,691.39

NET INCOME..... \$6,331,341.61 \$5,339,963.12

DISPOSITION OF NET INCOME

Income applied to sinking funds.....	\$98,482.05	\$98,226.00
Dividend appropriations of income.....	3,556,648.00	1,499,365.00

TOTAL SINKING FUND AND DIVIDEND APPROPRIATIONS..... \$3,655,130.05 \$1,597,591.00

INCOME BALANCE TRANSFERRED TO PROFIT AND LOSS ACCOUNT..... \$2,676,211.56 \$3,742,372.12

Agreement and Articles of Consolidation is \$105,500,000, of which \$45,880,000 is to be preferred stock and \$59,620,000 is to be common stock. The amount of stock authorized by the Interstate Commerce Commission to be presently issued in exchange for the stocks of the constituent companies is \$78,967,900, of which \$32,720,000 is preferred stock and \$46,247,900 is common stock. On December 31, 1923, capital stock of the constituent companies amounting to \$78,468,800 par value had been exchanged, par for par, for stock of this company, leaving a stock liability for conversion under the Agreement and Articles of Consolidation of \$499,100. A part of the stock which will be issued to discharge that liability will be contributed to the Company, pursuant to the Agreement. Because of contributions by stockholders and other adjustments incident to the consolidation, the Company holds in its treasury, out of the total of \$78,468,800 issued and exchanged to December 31, 1923, fully paid preferred stock of the par value of \$6,785,714 and fully paid common stock of the par value of \$15,751,596.

The Board takes pleasure in acknowledging the fidelity, efficiency, and united efforts displayed by your officers and employees in the discharge of their duties during the year.

O. P. VAN SWERINGEN,
Chairman of the Board.

J. J. BERNET,
President.

(Continued from page 1176)

of distilleries in the territory served, although it was stated that in the first eight months of 1923 about 3,325 tons of whisky were shipped over the line as compared with 37 tons handled in 1922. An officer of the Frankfort distillery stated that it will require four or five years to withdraw the whisky now in the warehouse and that it is planned to resume manufacture. The losses of the railroad have been borne by the Louisville & Nashville, which formerly owned the stock, but which has advised the commission that it does not intend to continue its support. "In view of the peculiar relationship between the applicant and the L. & N.," the commission says, "a receivership might possibly be to the applicant's advantage and in the interest of the public it serves."

HOCKING VALLEY.—Bonds.—This company has applied to the Interstate Commerce Commission for authority to nominally issue \$981,000 of general mortgage bonds and to pledge \$933,000 as collateral for a note of \$700,000 to the director general.

INDIANA HARBOR BELT.—Equipment Trust Certificates.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$375,000 of 5 per cent equipment trust certificates which it is expected will be sold to J. P. Morgan & Co., at 97.56.

LEHIGH & HUDSON RIVER.—Annual Report.—The annual report for the year ended December 31, 1923, shows a net income of \$624,942, as compared with \$138,641 in 1922. The income account compares as follows:

	1923	1922
Freight revenue	\$2,933,587	\$2,240,094
Passenger revenue	42,490	45,773
Total operating revenues	3,117,709	2,412,760
Maintenance of way and structures	329,470	314,957
Maintenance of equipment	565,166	438,251
Traffic	18,621	17,345
Transportation	1,176,184	1,082,166
General	103,602	95,054
Total operating expenses	2,193,039	1,947,728
Net revenue from railway operation	924,670	465,032
Railway tax accruals	155,608	163,331
Railway operating income	769,040	301,700
Gross income	870,745	348,640
Total deductions from gross income	245,802	209,998
Net income transferred to profit and loss	624,942	138,641

LEHIGH & NEW ENGLAND.—Annual Report.—The annual report for the year ended December 31, 1923, shows a net income of \$975,895 as compared with \$384,193 in 1922. A selection of the principal items in the income account follows:

	1923	1922	Increase or Decrease
Operating Revenues:			
Anthracite coal	\$2,940,912	\$1,845,445	\$1,095,467
Bituminous coal	611,809	789,608	-177,799
Merchandise	2,167,896	1,850,478	317,418
Passenger	22,652	22,951	-299
Total, including other	5,843,136	4,597,073	1,246,063
Operating Expenses:			
Maintenance of way and structures	767,432	620,636	146,796
Maintenance of equipment	1,557,388	1,101,779	455,609
Traffic	87,126	106,164	-19,038
Transportation	1,842,485	1,647,730	194,755
General	214,818	189,819	24,999
Total operating expenses	4,468,245	3,664,039	804,206
Net operating revenue	1,374,891	933,034	441,857
Railway tax accruals	224,979	219,424	5,555
Total railway operating income	1,149,814	713,584	436,230
Gross income	1,408,175	885,416	522,758
Total deductions from gross income	432,280	501,223	-68,943
Net income	975,895	384,193	591,701
Income applied to sinking and other reserve funds	8,910	8,206	704
Balance transferred to Profit and Loss	966,984	375,987	590,997

NEW YORK CENTRAL LINES.—Equipment Trust Certificates.—The New York Central; Michigan Central; Cleveland, Cincinnati, Chicago & St. Louis, and the Cincinnati Northern have applied to the Interstate Commerce Commission for authority for an issue of \$45,630,000 of equipment trust certificates to be sold at such price as shall have been approved by the commission after representations by the applicant.

PITTSBURGH & WEST VIRGINIA.—New Director.—H. W. Nethken has been elected a director to succeed E. R. Thayer.

RICHMOND, FREDERICKSBURG & POTOMAC.—Annual Report.—The annual report for the year ended December 31, 1923, shows a net income of \$2,297,035, an increase of \$202,124 over 1922. A selection of the principal items in the income account follows:

	1923	Increase or decrease
Freight revenue	\$5,873,373	\$353,700
Passenger	4,243,153	670,580
Total operating revenues	12,077,813	1,102,002
Maintenance of way and structures	1,217,062	-35,387
Maintenance of equipment	1,813,408	355,201
Traffic, miscellaneous and general	691,929	50,131
Transportation	4,214,377	331,928

Total operating expenses	7,936,776	701,873
Net revenue from rail operations	4,141,037	400,129
Railway tax accruals	674,717	42,226
Total operating income	3,466,093	358,461
Net railway operating income	2,811,335	267,687
Total non-operating income	172,646	-123,723
Gross income	2,983,982	143,965
Total deductions from gross income	686,947	-58,160
Net income	2,297,035	202,124
Income applied to sinking and other reserve funds	300,000	.....
Income balance	1,997,035	202,124

RUTLAND.—Equipment Trust Certificates.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$825,000 of 5 per cent equipment trust certificates which it expects to sell to J. P. Morgan & Co., at 96.96.

ST. LOUIS-SAN FRANCISCO.—Securities.—The Interstate Commerce Commission has authorized this company to issue in temporary or definitive form, \$2,984,600 of prior-lien mortgage bonds, series B, and \$5,904,200 of prior-lien mortgage bonds, series D; the series B bonds and \$500,000 of the series D bonds to be pledged and repledged from time to time as collateral for notes; also to sell \$8,500,000 of series D bonds at not less than 88½. Subsidiaries of the company were also authorized to issue their promissory notes aggregating \$2,723,564 to be delivered to the St. Louis-San Francisco for expenditures for additions and betterments. The company proposed to draw down a total of \$11,840,900 of bonds to reimburse it in part for expenditures not yet capitalized for additions and betterments to its property and that of its subsidiaries, but the commission held that it had not shown a present necessity for the full amount and action was deferred on its application for authority to sell \$2,984,600 of series B bonds and to issue \$2,952,100 of adjustment mortgage bonds.

TEXAS & PACIFIC.—Readjustment.—The Interstate Commerce Commission has authorized this company to issue \$24,676,000 of 5 per cent non-cumulative preferred stock and \$4,440,583 of unsecured coupon serial notes; also to issue and pledge \$1,826,500 of general and refunding bonds and to assume obligation and liability in respect of certain equipment obligations, in accordance with the plan of readjustment promulgated by Kuhn, Loeb & Co., on November 26, 1923. The commission also authorized the acquisition by the Missouri Pacific of \$23,703,000 of the 5 per cent non-cumulative preferred stock.

WESTERN PACIFIC.—Equipment Trust Certificates.—The Interstate Commerce Commission has authorized an issue of \$3,105,000 of 5½ per cent equipment trust certificates to be sold at par and accrued dividends to the American Car & Foundry Company.

WEST JERSEY & SEASHORE.—Annual Report.—The annual report for the year ended December 31, 1923, shows a net income of \$1,125,308 as compared with \$1,167,788 in 1922. The income account compares as follows:

	1923	Increase or Decrease
Mileage, including ferries	361	.....
Freight revenue	\$5,015,380	-\$110,323
Passenger revenue	8,059,190	260,271
Total operating revenues	14,142,520	124,429
Maintenance of way and structures	2,369,870	330,153
Maintenance of equipment	2,632,669	144,752
Traffic	203,483	8,144
Transportation	6,306,870	-60,823
General	331,549	-3,835
Total operating expenses	11,992,566	416,155
Net revenue from railway operations	2,149,954	-291,725
Railway tax accruals	860,036	-40,288
Railway operating income	1,289,947	-251,627
Net railway operating income	990,825	-288,877
Gross income	1,547,494	13,509
Total deductions from gross income	422,186	55,989
Net Income	1,125,308	-42,480
Appropriations to sinking fund	108,060	40,080
Dividend appropriations of income	463,450	231,725
Balance transferred to credit of Profit and Loss	553,798	-314,285

Dividends Declared

Chicago, Burlington & Quincy.—5 per cent, semi-annually, payable June 25 to holders of record June 19.
Colorado & Southern.—First preferred, 2 per cent, semi-annually, payable June 30 to holders of record June 19.
New York, Chicago & St. Louis.—Common, 1½ per cent, quarterly, payable July 1 to holders of record May 15.

Trend of Railway Stock and Bond Prices

	Last May 6	Last Week	Last Year
Average price of 20 representative railway stocks	63.87	62.61	63.66
Average price of 20 representative railway bonds	85.27	85.26	82.23

Railway Officers

Executive

Timothy W. Evans, whose appointment as assistant vice-president of the New York Central, with headquarters at New York, was announced in the *Railway Age* of April 26, page



T. W. Evans

1068, was born on July 15, 1867, at Morris Run, Pa. He was educated in the common schools and entered railway service on June 1, 1883, with the Fall Brook Railway, now a part of the New York Central, as a telegraph operator at Cedar Run, Pa. In December of the same year he was transferred to Wellsboro, Pa., remaining at that place until April, 1888, when he was appointed train dispatcher of the same road at Jersey Shore, Pa., and about five years later he went as a train dispatcher to the Beech Creek Railway,

which became a part of the Pennsylvania division of the New York Central in 1899. He remained in that position until September, 1901, when he was appointed trainmaster of the Beech Creek district of the Pennsylvania division of the New York Central. In December, 1904, he was made chief trainmaster of the Pennsylvania division, and from May, 1906, to October of the following year he was assistant superintendent of the same division. In October, 1907, he was appointed superintendent of the Rochester division, and in June, 1910, was appointed superintendent of the Buffalo division of the same road. He was promoted in October, 1912, to general superintendent of the Western district, and in April, 1915, he was appointed general superintendent of the Second district at Buffalo, N. Y. On June 1, 1916, Mr. Evans was promoted to assistant general manager, lines East, at New York and on April 1, 1920, he was transferred to Syracuse, in the same capacity, the position he held at the time of his recent promotion to assistant vice-president.

Operating

L. A. Champ, terminal trainmaster of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Toledo, Ohio, has been transferred to the Chicago division, with headquarters at Kankakee, Ill., succeeding E. W. McVicker, whose promotion to assistant superintendent of the Cincinnati-Sandusky division was reported in the *Railway Age* of May 3.

A. E. Walker, whose promotion to general superintendent of the second district of the Chicago, Rock Island & Pacific was reported in the *Railway Age* of April 5 was born on May 12, 1867, at St. Louis, Mo. He entered railway service in August, 1887, in the engineering department of the Chicago, Kansas & Nebraska, now a part of the Chicago, Rock Island & Pacific. He was employed as a brakeman on the Colorado division in November, 1888, and in September, 1891, was promoted to freight conductor. He was promoted to passenger conductor in 1899 and served in this capacity until March, 1907, when he was promoted to trainmaster of the Missouri division. Mr. Walker was transferred to the Oklahoma division in December, 1910, and in February, 1912, was promoted to superintendent of the Amarillo division. He was transferred to the Louisiana division in February, 1914, and to the Arkansas division in July of that year. Mr. Walker was trans-

ferred to the Kansas division in January, 1924, and he held that position until his recent promotion to general superintendent.

N. B. Walton, whose promotion to general superintendent of the British Columbia division of the Canadian National was reported in the *Railway Age* of April 26, was born on July 27,



N. B. Walton

1884, at Palmerston, Ont. He entered railway service in August, 1900, as a clerk on the Grand Trunk and later was promoted successively to telegraph operator, secretary to the vice-president and trainmaster. After spending a year in the service of the Great Northern, Mr. Walton returned to the Grand Trunk in January, 1908, as claim agent. In October of that year, he was promoted to secretary to the general superintendent and he held this position until August, 1910, when he was promoted to trainmaster

and assistant to the general superintendent at Winnipeg, Man. Mr. Walton was promoted to superintendent of the Edmonton division in July, 1911, and in November, 1920, he was promoted to assistant general superintendent. He held this position until his recent promotion to general superintendent.

D. W. Dinan, whose promotion to assistant general manager of the New York Central, with headquarters at Syracuse, N. Y., was announced in the *Railway Age* of May 3, page 1123, was born



D. W. Dinan

on November 14, 1866, at Whiteport, N. Y., and graduated from New Paltz Academy in June, 1883. He entered railway service in December of the same year as a station agent and telegrapher for the Walkill Valley, now a part of the New York Central, at Binnewater, N. Y. He subsequently served from March, 1886, to November, 1900, as train dispatcher on the West Shore, now also a part of the New York Central, at Kingston, N. Y., and then consecutively as trainmaster and chief trainmaster of the Pennsylvania division of the New

York Central, at Jersey Shore, Pa. On October 1, 1904, he was appointed assistant superintendent of the same division and in May of the next year he was promoted to superintendent at Corning, N. Y. On April 1, 1911, he was appointed superintendent of the Mohawk division at Albany, N. Y., and on May 1, 1917, Mr. Dinan was promoted to general superintendent of the Second district at Buffalo, N. Y., the position he held at the time of his recent promotion.

I. A. MacPherson, general superintendent on the Canadian National, with headquarters at Regina, Sask., has been appointed superintendent, with headquarters at Prince Rupert, B. C. **T. P. White**, superintendent of transportation of the Manitoba district, with headquarters at Winnipeg, Man., has been appointed regional superintendent of car service, with the same headquarters, succeeding E. Crawford, promoted. **M. Helston** has been appointed superintendent of transportation of the Manitoba district, succeeding Mr. White.

Albert Wilcox, whose promotion to general superintendent of transportation of the Western region of the Canadian National, with headquarters at Winnipeg, Man., was reported in the *Railway Age* of April 26, was born on January 2, 1865, at Kincardine, Ont. He entered railway service in 1881 as an operator on the Canadian Pacific, later being transferred to the Western division as agent and operator. In 1886 he was promoted to dispatcher at Winnipeg, Man., and in the following year was transferred to Moose Jaw, Sask. Mr. Wilcox was promoted to chief dispatcher in 1890, and he held this position until 1903, when he was appointed chief dispatcher on the Canadian Northern at Port Arthur, Ont. From 1904 to 1911 he served as division superintendent on various divisions and in November of the latter year, was promoted to assistant general superintendent at Winnipeg, Man. Mr. Wilcox was promoted to general superintendent of the Western division in December, 1911, and in January, 1913, he was transferred to the Central district, now a part of the Canadian National. Mr. Wilcox held this position until his recent promotion to general superintendent of transportation.



A. Wilcox

Edmund Crawford, whose promotion to division superintendent of the Canadian National, with headquarters at Regina, Sask., was reported in the *Railway Age* of April 26, was born on March 30, 1884, at Farnhill, Ont. He graduated from the Strathroy, Ont., Collegiate Institute in 1901, and entered railway service in October of that year as a clerk on the Pere Marquette at Detroit, Mich. He was employed in a similar capacity on the Pennsylvania from April to September, 1906, on the latter date being appointed chief yard clerk on the Grand Trunk at London, Ont. He was promoted to chief clerk to the general foreman at Toronto in June, 1912, leaving that position in September, 1912, to enter the car service department of the Canadian Pacific. Mr. Crawford was appointed traveling car agent of the Canadian National in September, 1915. He was promoted to chief clerk to the superintendent of transportation at Toronto, Ont., in May, 1916, and held this position until December, 1916, when he was promoted to superintendent of car service of the Eastern lines. Mr. Crawford was transferred to the Western lines in October, 1918, and continued in that position until his recent promotion to division superintendent.



E. Crawford

Traffic

T. H. Gunther, traveling freight agent for the Atlanta, Birmingham & Atlantic, with headquarters at Cincinnati, Ohio, has been appointed commercial agent, with the same headquarters, succeeding W. McG. Brooks, resigned to accept service with another company.

J. E. Parks, traveling freight agent for the Western Maryland, with headquarters at Hagerstown, Md., has been appointed commercial freight agent, with headquarters at York, Pa., succeeding W. C. Schafer, who has been appointed contracting freight agent, with headquarters at Baltimore, Md. C. E. Gehr has been appointed traveling freight agent, with headquarters at Hagerstown, succeeding Mr. Parks.

Engineering, Maintenance of Way and Signaling

R. A. Cook, valuation engineer of the Chicago & Alton, with headquarters at Chicago, has been promoted to chief engineer, with the same headquarters, succeeding H. T. Douglas, Jr., whose death on March 31 was reported in the *Railway Age* of April 5.

L. B. Elliott, engineer maintenance of way of the Peoria & Eastern, a subsidiary of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Indianapolis, Ind., has been appointed district engineer of the Cincinnati-Sandusky division of the Cleveland, Cincinnati, Chicago & St. Louis, with headquarters at Springfield, O., succeeding W. S. Burnett, whose promotion to engineer of construction was reported in the *Railway Age* of April 26.

J. A. Heaman, assistant chief engineer of the Western region of the Canadian National, with headquarters at Winnipeg, Man., has been promoted to chief engineer of the Grand Trunk Western lines, with headquarters at Detroit, Mich., succeeding T. T. Irving, whose transfer to the Central region was reported in the *Railway Age* of April 19. Mr. Heaman was born at Memphis, Tenn., on June 3, 1874, and graduated from McGill University, Montreal, Que., in 1902. He entered railway service as an instrument man on the Grand Trunk in April 1901, and in April of the following year was promoted to resident engineer. Mr. Heaman was appointed assistant resident engineer at Toronto, Ont., in November, 1902, and a year later he was appointed assistant engineer in charge of a location party on the Grand Trunk Pacific. He held this position until May, 1905, when he was promoted to division engineer in charge of location and construction. Mr. Heaman was promoted to assistant district engineer in November, 1906, and in April, 1911, he was promoted to district engineer at Winnipeg. He was promoted to office engineer at Winnipeg in March, 1912. Mr. Heaman was promoted to division engineer at Jasper, Alberta, in March, 1912, and in August of that year, was promoted to assistant to the chief engineer at Winnipeg. He was promoted to assistant chief engineer at Winnipeg in December, 1917, and his jurisdiction was extended over the western lines of the Canadian National after the consolidation of the Grand Trunk Pacific with the Canadian National. He continued in this capacity until his recent promotion to chief engineer at Detroit.



J. A. Heaman

Mechanical

C. G. Henderson has been appointed master mechanic of the Southern, with headquarters at Charleston, S. C., effective May 1.

R. M. Brown, engineer of motive power of the New York Central, with headquarters at New York, has been appointed assistant superintendent of motive power, with the same headquarters.